THE RUBBER AGE

JUNE 10, 1921 VOL. IX. NO. 5

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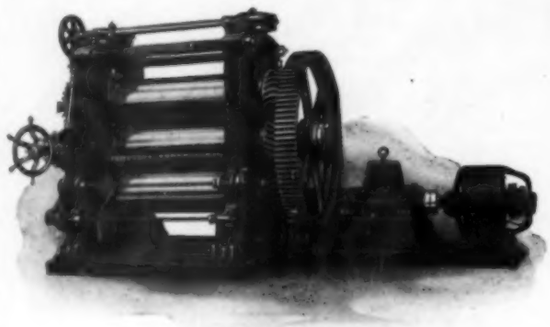

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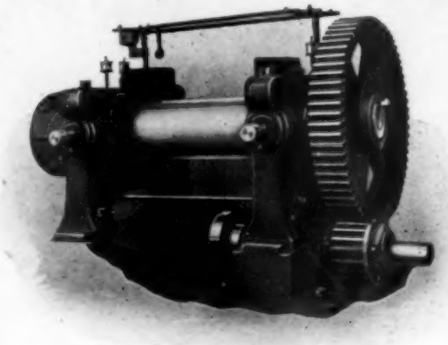

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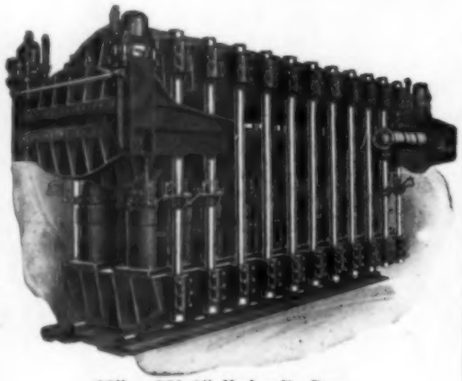

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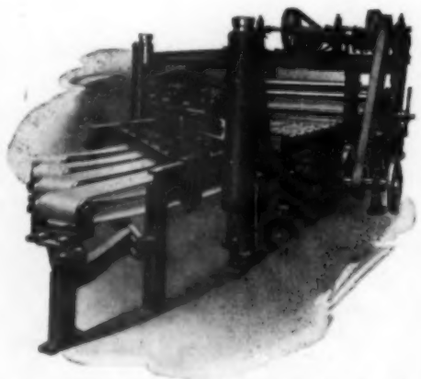

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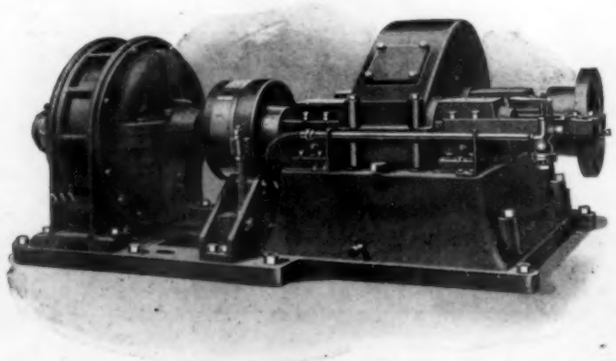

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THE RUBBER AGE

G. M. SANGSTER, Jr.
MANAGING EDITOR
PETER P. PINTO
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Mechanical Rubber Goods and the Railroads

Considerable comment has arisen recently over the fact that the purchases of mechanical rubber goods on the part of the railroads have fallen off considerably during the last few months. The following article gives some of the reasons for this apparent lack of interest on the part of these factors in transportation as expressed during interviews with the heads of the purchasing departments of several railroads.

Manufacturers of mechanical rubber goods have been complaining loud and often of the continued absence from the market of the railroads. Throughout the country the handful of railway companies are among the largest consumers of mechanicals, such as pneumatic air-brake hose, belting and other rubber equipments, and their continued lack of buying at the present time has been severely felt by the rubber trade.

The large producers of belting, hose and packing have varied in their statements of their rate of production during the first four months of 1921, from 40 to 60 per cent. They have all agreed, however, that the lack of railroad buying has been at the root of all their trouble in getting started on the road back to normaley.

Curtailed Buying

"During the greater part of 1920, the railroads bought liberally in advance of their requirements," said a large mechanical rubber man to the representative of THE RUBBER AGE, "but since the first of this year, they have curtailed their buying drastically and to all practical purposes have been entirely out of the market for supplies and equipment. This reduction in demand together with depression in other consuming trades has made it hard for the mechanical department of our company to resume normal operations along with the tire department. If we could find out what the railroads proposed to do, I think we would get right at the root of the whole problem of reviving the trade."

This view seemed to represent the feelings of the majority of the other large mechanical rubber manufacturers, who were interviewed in New York, and in attempting to get to the bottom of the whole situation investigations were made among the purchasing departments of the railroads represented in this city.

An Opinion from The New York Central

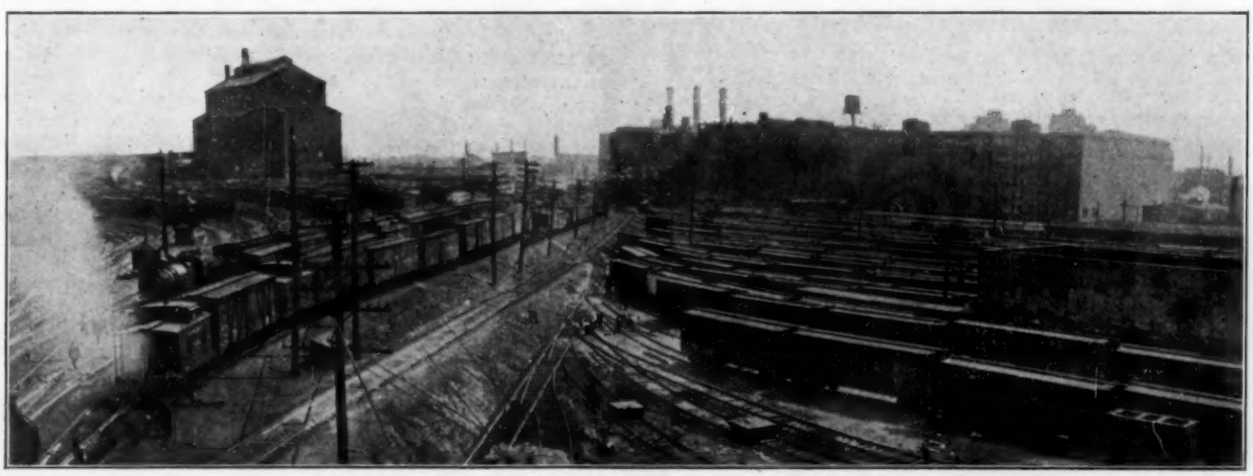
At the offices of the New York Central Railroad, C. S. White, of the purchasing department stated, "The railroads are not buying iron and steel supplies any more than they are buying rubber goods. The iron and steel industry of the country is operating at about 40 per cent of its normal capacity, according to the opinions of those who are best-informed upon the subject and thereby reflects the absence of railroad buying.

"The truth is that we have been buying no more than our current wants have dictated, and in accordance with the stocks we have had on hand for some time. Our repair shops and equipment shops have been closed down for more than four months, and so we have not been consuming fresh supplies, since there has really been very little need for them.

"Previous to this year we bought supplies three or four months ahead of our needs in order to protect deliveries. Now the market is so glutted with material that we can order something today and have it delivered tomorrow, so that we can go along only filling our current requirements from day to day."

"That of course, is what is holding back almost every industry this year," the interviewer ventured.

"If the railroads were in a better financial position, if they received better financial report such a policy would not have to be resorted to," Mr. White responded.



(Photo International)
IDLE FREIGHT CARS IN THE YARDS OF THE PENNSYLVANIA RAILROAD, JERSEY CITY, N. J.

With the railroads counting on the stocks they had accumulated last year to carry them for a time, the outlook, according to the mechanical rubber trade, is anything but cheerful.

At the offices of the Erie Railroad, Purchasing Agent W. R. Collins stated that his road had been out of the market entirely since January 1.

"The roads are not buying," he said briefly. "Our repair shops have been shut down for several months, and the need for more supplies has consequently dwindled to very small proportions. We are simply going along and filling our current needs as they arise. Of course we have a reserve stock which can carry us for some time at the rate we are going now. Just when we will resume normal operations and re-open our repair shops I don't know."

An official in the purchasing department of the Lackawanna Railroad stated that the repair shops of that road were still operating, but at a greatly reduced capacity. Requisitions, he said, had been drastically curtailed ever since the beginning of this year.

"Carrying less freight and running less cars, as most of the roads are at the present time, it is obvious that their consumption of such supplies as air-brake hose and other accessories would be greatly diminished."

Other Industries Affected

The rubber industry is not the only one which is suffering from the absence of railroad buying. Reports from Chicago indicate that the steel rail mills after operating at top speed for several months have been slowed down. The Gary mill has dropped far below its former producing rate of 20,000 tons a week. The railroads are not anxious for prompt deliveries and prefer to have their rails held back until labor conditions are more suited to their financial position. The roads are taking some tonnage of various finished steel products, but only such whose deliveries cannot be further delayed."

The railroads have indeed seen a shrinkage of their business. The total amount of carloadings for the whole country this Spring according to figures compiled by the Car Service Department of the American Railway Association, have run to about 150,000 per week less than during the same period of 1920.

There has been a steady decline in the number of cars loaded from week to week during the first three months of 1921, but during April a recovering tendency was noted and car loadings seem to be on the up-grade again.

The opinion of the large manufacturing interests who supply the roads was that labor troubles were at the bottom of the whole situation. In order to increase their earnings the roads must cut their labor costs, and since they have been working under a wartime agreement with one of the most powerfully organized labor bodies in the world, everything is deadlocked until July 1st when the compact expires.

Such a view was advanced by John Rowe, railroad-sales manager of the Chicago Pneumatic Tool Company, one of the largest manufacturers in the field. The shutting down of the repair shops, the refusal to buy supplies, and the resultant shrinkage of production in steel equipment plants are all part of a move in the struggle with organized labor.

The Chicago Pneumatic produces a goodly share of this country's brake-hose, and is, therefore, in a good position to know how well the roads are buying these supplies.

"Since the first of the year, they have bought practically nothing from us," said Mr. Rowe. "Their purchases have come in driblets during the first quarter and have probably not exceeded five or ten per cent of their buying rate last year.

Repair Shops Idle

"Their repair shops are practically at a standstill, and have been so for four months. That is where hose is used, and so there has been practically no purchasing of fresh supplies by the railroads and there probably will not be until they open again.

"It is apparent that the powers that be in the railroad world have decided not to buy anything whatsoever, if they can help it. Thousands of men have been thrown out of work in their shops and in plants like ours which supply the roads. In order for the roads to survive it is necessary, in the opinion of those who control them, to readjust labor costs on a lower basis. Organized labor has been insisting on a wartime wage scale. The railway companies are bent on reducing wages. On July 1st the agreement ends, and then we shall see."

Howard Elliot, chairman of the board of the Northern Pacific Railway Company, in explaining before the Senate Interstate Commerce Committee, in Washington, May 24, the great increase in the operating expenses of the railroads of this country, submitted statistics in an effort to show that the wage cost of train operation had more than doubled between 1917 and 1920.

"The wage-cost for operating a train one mile," Mr. Elliot said, "was $2.92 in 1920, compared with $1.47 in 1917, while if the wage increase made by the Railway Labor Board last July had been in effect the entire year the cost per train mile would have been $3.07."

Increases in Materials and Wages

Mr. Elliot also called attention to the "very significant effects of the increases in the price of materials and wages, the rules in the so-called national agreements, and the general disturbing effect of the war" on the cost of repairing freight cars and locomotives. This together with the financial condition of the carriers has resulted in an increase "beyond the danger point" in the amount of equipment out of repair because the carriers have not got the money to make such repairs.

Approximately 13.8 per cent of the cars owned by the Northern Pacific are in bad order, he said, of which 4,000 are "in heavy bad order" requiring approximately $1,500,000 to repair. On April 15, he said statistics showed that about 19 per cent of the locomotives on the railroads of the country were in need of repairs requiring more than twenty-four hours. Ten per cent is regarded as the maximum in normal times.

The settlement of the railway labor dispute is the next milestone to look for in the progress of the mechanical rubber industry. Another way out may be the steady increase in railroad activities such as was indicated in the records for April's car loadings. On April 16, the total reached 738,906 cars, the largest number since January 15 of this year. A marked increase in the amount of freight handled by the roads will surely do more to force them into the market than any other development.

Selling Tires in Belgium

The rubber tire trade of Belgium has lately developed such severe competition that an unprecedented wave of price cutting has swept the industry, affecting American as well as foreign makes of tires; according to information received from abroad by the Guaranty Trust Company of New York. Prices have been cut to such an extent that one of the large American companies represented in Belgium is recalling its agent, being unable to compete successfully under present conditions.

The Belgian rubber tire market was at its best immediately after the Armistice and the demand for American goods was unusual, but unfortunately many American companies were unable to make deliveries, despite promising orders. Later, with a gradual return to somewhat normal, or at least improved, conditions and greater production, needs were gradually supplied. Meanwhile, the exchange rate continued high and, while the excellence of the American tire is generally recognized, purchasers could not buy at the high rate, compared with the prices asked by European makers.

Another problem confronting the American tire dealers is the question of credits. Americans have demanded cash in advance or payment against documents, a requirement which many Belgian firms have been unwilling to meet. Opposed to the American policy is the practice of consigning goods and offering long term credits, which has long been the German custom and which has recently been adopted by at least one large French tire company. Whether American firms will adopt such methods remains to be seen, but it may well be emphasized that if business is to be obtained, European competition must be taken into consideration and every effort made to meet it.

Lithopone, Its History and Manufacture

By John S. Williams, Jr.

Vice-President A. J. Muir & Co.

Lithopone is a pure white pigment, chemically a combination of precipitated sulphide of zinc and sulphate of barium and was first discovered, or made about fifty years ago in England.

Its value was not recognized at the time of its discovery and its manufacture was not attempted for a number of years. Germany first recognized its possibilities and manufactured lithopone for many years before it was produced in any other country. France next took it up but in the early years the industry never reached any importance in that country, which is surprising when we consider the fact that the French Government fostered the zinc industry, owing to the tax or royalty paid to the French Government on all productions of zinc. England was probably the next country to attempt its manufacture, but there is reason to believe that this was partially due to the English desire to become independent of German importations, rather than to any great belief in the future of the industry. A certain amount of lithopone was manufactured in Spain, at about the same time that it appeared in England.

Manufactured in the United States

In the United States, lithopone was first manufactured about 1900, but the industry was not of sufficient importance to call for a specific report on the tonnage produced, or used, in this country until 1906 when the United States Geological Survey reported a consumption of 4,300 tons. Prior to this they had reported only that the product was being made in a small way.

The early manufacturers in the United States were all located on the Eastern seaboard, this possibly being due to the fact that Germany was the only real producer, and that the Eastern manufacturer of paints was more favorably situated to obtain an imported pigment and try it out than those located further West.

In the early manufacture of lithopone in the United States many difficulties were encountered and at least three concerns, in the East, attempted its manufacture, but finally were compelled to import German chemists and methods before obtaining even fairly satisfactory results.

This had two effects upon the industry—first to discourage any great development in the United States, and secondly to lead to the copying of German methods in the manufacture through fear of obtaining unsatisfactory results. German methods were, however, absolutely unsuited to conditions in this country, their practice being adapted to small units, and marked the absence of any labor saving devices, and it was not until 1910 to 1915 that the demand in the United States increased so that it justified a real and serious development of the industry.

It requires about 400 tons of raw material such as zinc, barytes ore, sulphuric acid, coal, cooperage and miscellaneous chemicals to manufacture 100 tons of lithopone. This being the case the logical location for a plant is not the Eastern seacoast, with its high coal cost, long haul on zinc, cooperage, etc., but a location near the great zinc and barytes fields of the Middle West and their adjacent coal fields, and it is in this section that the future development of the industry must come.

Location of Plants

At the present time lithopone is manufactured in one plant in Baltimore; two in the Philadelphia district; two in New Jersey; one in Delaware, two in the Chicago section; two in St. Louis district and one on the Pacific Coast, and one in Indiana.

American methods of manufacture, labor saving devices, large units and new methods are rapidly revolutionizing the industry.

Many people attribute the great increase in the industry in this country in the past few years to the war and to the cessation of importations, but as the importations have never exceeded 16 per cent of the consumption in the United States, and have since 1906 averaged less than 10 per cent, this is hardly a fair conclusion, and the more reasonable analysis shows that the increase in production and consumption has been due to the general recognition of lithopone's value as a pigment, and for other uses.

Uses of Lithopone

Considering its comparatively recent origin as compared with the other two great pigments, white lead, which has been known for two thousand years; and zinc oxide for one hundred and fifty years; we must bear in mind that lithopone has hardly yet had time to be fully tested in many of the various industries.

Lithopone is used extensively in the manufacture of paints, either simply ground in oil and tinted, or mixed with other ingredients. It is also used largely in the manufacture of rubber goods, such as automobile tires, rubber matting, etc.; and in the manufacture of oilcloth, linoleum, window shade cloth; and, to a smaller extent in printers' ink, face powder, etc.

In the manufacture of rubber goods such as automobile tires, rubber matting, fruit jar rings, rubber toilet articles, tubing, etc. it is used as a filler, and also for the curative effect the zinc sulphide has on the rubber. For this use zinc sulphide is far superior to zinc oxide. This is perhaps best illustrated by the fact that in the manufacture of the highest grade of rubber made—medicinal sheeting and dental rubber—pure zinc sulphide is used.

In linoleum, lithopone and ground cork are used as a base. In shade cloth it is used as a filler to make the cloth impervious to light, in printers' ink as a non-corrosive inert filler, etc.

While probably not conscious of it, we are continually seeing lithopone both in and out of our homes. The white oilcloth on the kitchen table, linoleum on the floor, white enamel in the bathroom, flat wall and ceiling tints, our window shades, and all rubber goods in our houses contain it. As we go out our automobile tubes and casings, rubber coats and rubber overshoes, the printers' ink on the morning and evening paper, and much of the painting on our houses, all contain lithopone, and it is by no means one of the least important ingredients entering into their manufacture.

Composition of Lithopone

As normally manufactured, lithopone contains 30 per cent zinc sulphide and 70 per cent barium sulphate, these being the proportions obtained by precipitation of normal barium sulphide and zinc sulphate solutions.

For certain purposes a lithopone is required having a higher percentage of zinc sulphide, and this can be obtained by adding to the barium sulphide liquor, sodium sulphide solution which will precipitate zinc sulphide from the zinc sulphate solution, and leave sodium sulphate, which is soluble ,and can be washed out; or by adding zinc chloride to the zinc sulphate solution which with the barium sulphide will precipitate an excess of zinc sulphide and leave barium chloride, which is also soluble and can be washed out. The percentage of zinc sulphide can thus be regulated at will.

In the preparation of the zinc sulphate solution zinc dross, skimmings, ash, or roasted blende or zinc oxide is dissolved in dilute sulphuric acid of about 20° Be strength. This solution is neutralized, filtered to remove any insoluble residue and

Paper read before the American Zinc Institute Hotel Statler, St. Louis, Mo., May 10, 1921.

then carefully purified and refiltered. This purification is one of the most important steps in the manufacture of high grade lithopone, and there is probably more variation in this process—in various plants—than in any other one step in the manufacture. High grade white lithopone cannot be made unless practically pure zinc sulphate solutions are obtained. Broadly speaking the purification consists of using some powerful oxidizing agent to precipitate iron and other metallic sulphates; filtering; and then boiling with zinc dust to remove cadmium and cobalt and refiltering. The various foreign metals must be removed, as almost infinitesmial traces of iron, cadmium, cobalt, copper, etc., will discolor the finished product.

Preparing Barium Sulphide Solution

In preparing the barium sulphide solution, barytes ore (sulphate of barium) is finely ground with coal or coke and roasted in a reverberatory hearth, muffle furnace, Bruckner roaster or rotary kiln. The finer the grinding the better the results obtained.

Air must be excluded, so far as possible, in the roasting—as the presence of an excess of air tends to form barium carbonate which in most plants is a waste. This roasting reduces the barium sulphate to barium sulphide, and the resultant roast, known as black ash, is leached in water, yielding a barium sulphide solution, which is filtered and is then ready for use.

Precipitation of Lithopone

The purified zinc sulphate solution and the barium sulphide solution are brought together, and raw lithopone is precipitated—consisting of about 30 per cent zinc sulphide and 70 per cent barium sulphate.

This raw lithopone is then washed, to remove any impurities in the way of soluble salts which would be injurious to the finished product, and which will probably be present owing to the chemicals used in purifying the zinc sulphate, and is then filtered and dried.

In the drying care must be exercised not to raise the temperature too high, as this would be injurious to the raw pigment.

Calcining the Raw Pigment

After thorough drying the raw pigment is calcined in muffles, care being exercised to exclude air so far as possible in this process, as the hot zinc sulphide readily oxidizes at the temperatures required, and it is desirable to keep the zinc oxide contents of lithopone as low as possible.

The calcination is done at temperatures ranging from 1000° to 1400° F. according to the practice in various plants. This calcination drives off the water of hydration from the zinc sulphide, and adds to the value of the pigment. Raw uncalcined lithopone has little or no value as a pigment, having little covering capacity, poor tinting strength, and being very difficult to grind in oil owing to the combined water in the zinc sulpide. The calcination produces certain physical as well as chemical changes in the pigment, and proper calcination is one of the most important steps in the entire process of manufacture. Assuming that the solutions have been properly purified the calcination determines the grade and value of the finished product.

The hot calcined pigment is discharged from the calcination furnaces direct into water and quenched. This prevents oxidation of the hot zinc sulphide and, apparently, has a further effect on the properties of the finished product, for which so far, no satisfactory explanation has been given. Many theories have been advanced as to the actual effect of this quenching, aside from protecting the zinc sulphide from oxidation, but to the writer all seem rather vague and theoretical.

Variations in the Process

From this point on the process is varied according to practice in different plants.

In some the quenched product is wet ground, washed, filtered, dried and reground, then packed in barrels or bags for shipment. In others it is simply ground wet, floated, dried and reground and packed; while in still other cases the quenched product is dried at once, ground dry and air floated, then packed for shipment. The finished product should be fine enough so that 98 to 99 per cent will pass a 300 mesh screen.

The variations in these latter steps are probably caused more by the preliminary operations and the actual conditions of the product itself at this point of quenching, than by any great variation in ideas as to how it should be done to obtain the best results.

The process is not a simple or easy one to operate, for while none of the steps are difficult in themselves, lithopone is very easily affected by small percentages of impurities or by comparatively slight differences in treatment in the various stages of manufacture, and technically correct, light-proof, white finished product is by no means easily obtained.

The manufacturers are, however, improving the process all the time and great improvement has been made in recent years in the general quality and uniformity of the finished product, and what was considered a high grade product five years ago, would probably be unsaleable today.

Growth of the Industry Remarkable

The mineral resources of the United States published by the United States Geological Survey, report on lithopone as being manufactured in a small way in 1900 to 1905 but the first actual figures of production given are for 1906 when 4,300 tons were produced. The growth from that time is given as follows:—

1906	4,300 tons
1910	14,528 tons
1915	48,537 tons
1919	73,238 tons

In thirteen years the increased consumption has been 1600 per cent and has practically doubled every five years.

During this period while there has been an increased consumption of zinc oxide and white lead, it has in no way compared with the increase in lithopone. In 1906 there were produced in the United States 74,680 tons of zinc oxide and in 1919, 116,639 tons, an increase of 60 per cent against 1600 per cent increase for lithopone in the same time.

The price of lithopone from 1910 to 1915 was fairly constant at about 3½ cents to 3¾ cents per pound. During the war the price increased rapidly and reached the peak in 1916 at 14½ to 15½ cents per pound, then dropped again to 6 to 6½ cents per pound in 1917. From 1917 to 1921 the price has fluctuated at from 6½ to 8 cents per pound, the market today being 7 to 7½ cents.

Cost of Production

During 1919 the average cost of production in the United States was given as $120.40 per ton, or for the 73,238 tons a total cost of $8,817,855.20 and of this amount 20.5 per cent was the actual cost of the zinc used, or $1,804,360.31 actual cost of zinc used.

While the above figures are taken from the Government reports, private sources of information would indicate that the actual production and consumption was much larger than the above, probably fully 100,000 tons in 1920.

Importations of Lithopone

The importations of lithopone have never amounted to more than 16 per cent of the consumption in the United States and from 1910 to 1920 have averaged 10 per cent.

Lithopone as marketed contains actually 20 per cent of metallic zinc, the method of manufacture necessitates the use of about 25 per cent of metallic zinc by weight, of the finished product, and based on the Government report for 1919, this would indicate a consumption of about 18,400 tons of metallic zinc in lithopone.

While this is not large compared with the total consumption of zinc for the same year, the increase from 1070 tons of metallic zinc used in 1906 to 3,642 tons in 1910, and from 12,144 tons in 1915 to 18,400 tons in 1919, of metallic zinc used in the manufacture of lithopone, is significant as indicating the increasing importance of the lithopone industry to the producer of zinc.

Changes in Plantation Rubber after Storage

By Dr. O. de Vries

Present circumstances cause a revived interest in the storage of plantation rubber, and the opinion is again heard that plantation rubber, especially crepe, is not stable under tropical conditions. There is little doubt that the external appearance of the rubber loses on keeping; the color of pale crepe darkens decidedly while it takes on a more or less grey or brownish yellow tint; smoked sheet becomes dull and loses its brightness. These changes in the exterior, however, do not mean that the inner properties also change. Our data for samples kept for two to four years in cupboards, or for larger lots kept two years packed in chests in a godown, all point to the conclusion that the vulcanization quality of first grade rubber is not injured; tensile strength and slope remain unchanged. The rate of cure generally shows a small increase, and the only property that changes markedly is the viscosity; on short keeping it sometimes shows a decided increase, but after long keeping it nearly always decreases, and often markedly so. This, however, need not indicate a real deterioration from the manufacturing point of view, as during manufacture the viscosity of the rubber is often purposely brought down, to facilitate milling and mixing. Whether old rubber with a low viscosity shows abnormal milling capacities has not yet been made known.

TABLE I.

Sample.	Estate and Type.	First Tests. Tested.	Tensile Strength.	Standard Time of Cure.	Slope.	Viscosity.	Repeat Tests. Tested.	Tensile Strength.	Standard Time. of Cure.	Slope.	Viscosity.
78 A	W 33	June, 1916	1.46	105	37	30.5	Nov., 1920	1.44	90	34.5	20.5
B	Crepe		1.40	110	35.5	50		1.30	> 90	35.5	13
C			1.34	105	35.5	23		1.27	95	36.5	8.5
D			1.44	115	37	35		1.44	90	36.5	24
E			1.30	125	36	35		1.39	100	36	16.5
F			1.41	125	37	31.5		1.47	95	37	19
G			1.42	115	36	34.5		1.40	105	36	19
H			1.42	100	38	28.5		1.39	80	36.5	17.5
		Average	1.40	112[5]	36.5	33.5	Average	1.39	93	36.1	17.3
167 A	B 29	Aug., 1916	1.36	90	37	53	Nov., 1920	1.36	< 85	37	18.5
B	Sm. sheet		1.36	90	37	48		1.40	80	36	17
221 A	B 43	Sept., 1916	1.50	115	34.5	—	Oct., 1920	1.39	105	34.5	16
B	Crepe		1.48[5]	115	35	—		1.39	> 100	35	17.5
266 C	W 30	Dec., 1916	1.37	110	—	28.5	Dec., 1920	1.40	95	36.5	19.5
F	Crepe		1.41	< 110	37	26.5		1.46	95	37.5	20.5
G			1.40	< 110	37	24.5		1.45	95	38	20
H			1.42	> 100	37.5	26		1.50	< 90	37.5	22.5
I			1.38	< 110	37	24.5		1.48	90	37.5	20
		Average	1.39[5]	107[5]	37.2	26	Average	1.46	92[5]	37.4	20.5

No Deterioration in Storage

That raw plantation rubber does not suffer deterioration after storage for several years has repeatedly been stated by H. P. Stevens[1], who found that, when vulcanized, even after ten years it gave results comparable with those yielded by the freshly harvested raw material.

On the other hand, B. J. Eaton[2] mentions a deterioration after two or three years' storage in the tropics, and believes this is due to surface oxidation, which would be excessive in crepe, owing to the large amount of surface per unit weight. Slab rubber, kept in the moist state, is said not to show deterioration. These contentions, cited from the official report of the Director of Agriculture of the F.M.S. for 1918, appeared again in recent technical journals[3].

The conclusions of Eaton are in contradiction to those of Stevens and ourselves. We found both in smoked sheet and in first quality crepe, and even in many samples of brown crepe, tensile strength and slope unchanged after keeping in the tropics for two, three and four years. Oxidation of rubber is accompanied by a deterioration in tensile strength and slope; probably the "deterioration" meant by Eaton was a decrease in tensile strength. Unfortunately the figures on which Eaton bases his conclusions have not been published, and no details are given as to his experiments; a strict comparison of results is therefore not possible. Whether differences in the manner of keeping the samples—exposed to light and air, as against keeping in a cupboard or pressed in a chest, etc.—have any influence on the changes in the rubber, is not yet known. We further wish to draw attention to the fact that a comparison of testing results over a period of years presents greater experimental difficulties than the comparison of a series of samples which are tested at the same time, as special precautions are necessary to keep all the details in the method of testing the same during the course of years. For instance, the ball bearings of the testing machine gradually wear out when in constant use, and this may cause lower figures for tensile strength, which it would be obviously false to attribute to deterioration in the rubber. Our figures for 1916 and 1920 are strictly comparable in this respect, as the axles of our machine were renewed in the beginning of 1920, while in 1916 the machine was newly taken into use.

Table of Results

Table I. contains the testing results for four years' storage of four series of samples of first quality rubber from different estates. Tensile strength and slope remain on the average practically unchanged, while the time of cure decreases by 8-20 minutes. The viscosity has decreased in all cases and reached a value of 17-20.

TABLE II.

Sample.	Estate and Type.	First Tests. Tested.	Tensile Strength.	Standard Time of Cure.	Slope	Viscosity.	Repeat Tests. Tested.	Tensile Strength.	Standard Time of Cure.	Slope.	Viscosity.
657 A	W 14	Oct., 1917	1.35	115	35.5	41.5	Dec., 1920	1.39	95	36	35
1188	B 114	Sept., 1918	1.41	< 85	38	36	Feb., 1920	1.35	75	38	36
1190	M 93	"	1.44	> 105	36	33	"	1.43	< 85	36½	35

Table II. contains some figures for samples of smoked sheet, kept 3 and 1½ years. The differences are the same as above, but the decrease in viscosity is small.

Table III. is for crepe kept two years in the chests in a godown at Batavia, compared with the figures for the regular control samples from the same estate and the same month, freshly tested. Differences as above, small increase in viscosity.

(Continued on page 171)

India Rubber Journal, London.

[1] India-Rubber Journal 46 (1913), 777; further Journal Soc. Chem. Ind. 37 (1918), 340 T.

[2] Agric. Bull. F.M.S. 7 (1919), 226.

[3] India-Rubber Journal 60 (Dec. 1920), 1262.

ABSTRACTS

Technical — General — Commercial

The Waterproofing of Textile Fabrics

(Revue de Chimie Industrielle Vol. 30, (1921), 67-73)

There are numerous ways of rendering textile fabrics waterproof. As many as twelve different fundamental methods are cited, for a more detailed explanation of which the reader is referred to the original article. Three of these methods are based on the use of rubber and gutta-percha. These are as follows:

1. The application of rubber or gutta-percha in sheets either on or between the fabrics.
2. The impregnation of the fabrics with a solution of rubber or gutta-percha.
3. The impregnation of cloth with mixtures containing rubber admixed with oils, resins, etc.

The fabrics treated according to the methods 1 and 2, are generally very resistant to water. Furthermore, they are light, but as they possess the disadvantage of being impermeable to air they do not allow the evaporation of the perspiration of the body. They are easily detected by their odor. Although their use for the making of clothing is not to be recommended, nevertheless they are used for this purpose to a considerable extent. The fabrics manufactured according to method 3 can be made absolutely impermeable to water, but they are very heavy and are just as impermeable to air and to transpiration as those made by the first two methods.

Waterproofing by Means of Rubber or Gutta-percha

Silk as well as cotton and wool can be rendered waterproof by means of rubber or gutta-percha, provided the fabric possesses a closely woven texture. The closeness of the weave is an important consideration in the purchase of the cloth, as the finer the weave, the less of the waterproofing agent will be absorbed and the lower the cost of the product.

There are two ways of waterproofing textile fabrics and the method of procedure is practically as follows:

1. A rubber mass, softened by means of hot water, is flattened on the cloth in a very thin coat. After the flattening or rolling operation and the setting of the coating, the product is vulcanized by calendering, or less frequently by heating in an air bath.
2. The fabrics are impregnated in closed vessels with a thick solution of rubber in benzene or spirits of turpentine. The cloth then passes through calenders the cylinders of which are heated internally with steam. Flexible steel blades shear off all excess gum and make the surface of the finished product uniform throughout.

The thinner the solution of the rubber, the more regular will be the waterproofing of the fabric. But when the thin solutions are used it is then necessary to repeat the operation several times and the thinner the solutions, the more times must the operation be repeated. Coating machines are used for this purpose. The rubber solution is brushed on and is distributed evenly over the surface by means of flexible steel blades which remove all the excess material. Natural rubber gives a clear brown coating and vulcanized rubber a gray coating. These colors can be modified by the use of coloring matters.

Certain processes, as for example the Geryer process, use rubber waste in the vulcanized condition. The sulphur in the rubber is changed into the sulphite by means of a metal such as copper, iron, tin or zinc in the presence of a suitable solvent, such as benzene, toluene or zylene, etc.

A waterproof cloth can be obtained by interposing a very fine layer of rubber or gutta-percha between two strips of closely woven fabric, without the use of sizing. The material is then passed between heated cylinders. The compression and calendering serves to cause the two strips of cloth and the interposing rubber layer to unite to form a three layered fabric. It is well to finish the fabric by coating it with a clear oil varnish on both sides. In this manner, a product is obtained which is of the best quality. It is not only impervious to water but also to gas and is very flexible and light. It retains its favorable properties in spite of the effects of inclement atmospheric conditions. The process is very well suited for the manufacture of impermeable fabrics used in the making of gas balloons.

Waterproofing by Means of Mixtures Containing Rubber

This process is merely a variation of the preceding one. It is used in order to reduce the cost of the finished product, which is brought about by replacing the rubber with cheaper materials, such as, drying oils, semi-drying oils, tars, asphalts, pitches, glycerine, resins, vaseline, heavy hydrocarbons, etc. There are many compositions used for this purpose, which are described in detail in the original article.

A very good product is obtained by the use of a mixture, containing rubber, linseed oil and red ochre. The fabric possesses a remarkable resistance to water. When the material is soaked in water, it can be folded up and pressed together into the smallest possible volume and kept that way, without the least fear of it spoiling. It can also be heated without becoming sticky or softening. It does not become brittle when exposed to low temperatures and the increase in weight in the original material is scarcely noticeable.

The Reworking of Rubber—The Colloid Mill

(La Revue des Produits Chemiques)

The fact that colloidal chemistry is of prime importance in rubber technology has been known for a long time, as the latex is probably the most important vegetable colloid used in the industries. The application of the colloid mill to the regeneration of old rubber is, however, a new development in the recent rise of colloidal technology to a point of the highest significance both from a technical and an economical standpoint in numerous chemical industries, among which we can include the rubber industries. The colloidial mill is nothing more than a grinding apparatus, capable of reducing various substances, as for example old rubber, to a fine degree of subdivision and of converting it into a colloidal solution with water or other solvents. Such a mill has been invented in Germany and used for this purpose.

Plauson, who has been mainly responsible for the renewed interest shown in colloidal chemistry from the practical standpoint in the last few years, has patented a process for reworking rubber in a colloid mill. (see British patent 156150). The waste rubber is first freed from all fibrous materials and then ground in the mill in the presence of water or an organic medium, usually benzene or gasoline. The formation of a colloidal solution is accelerated by the addition of soap, such colloids as gelatine, starch, dextrine albumin or casein or by various rubber solvents. The separation of the sulphur is facilitated by the addition of the different alkalies, amines or ammonium sulphide. Both the free and the combined sulphur is separated from the rubber in the colloidal state, or else it is removed by means of solvents, while the rubber forms a sort of latex. The temperature range, within which the process can be carried out, is from 15 to 120 degrees C.

It is claimed that the results obtained with this process are far superior to those of the regenerative processes now in general use in addition to which the cost of working is less. The theoretical principle involved is both simple and logical. Rubber is a coagulated colloid, that is a gel, and the purpose of the colloid mill is to reduce the gel to the state of a sol again, that is to bring it back to the latex condition.

The Treatment of Iron Molds Used for Making Red Rubber Articles

Gummi-Zeitung, 1921, 643-644

In using iron molds with certain red rubber mixtures, neither talc nor magnesia, which materials are ordinarily used for this purpose, can be employed in either powdering the mold or in dusting the article itself. A soft soap must be used for this purpose. Both the green and the brown soft soaps give good results as far as they go, but they possess a disadvantage in that they discolor the red article formed. The soap is burnt into the rubber and gives it a dark color. The fast-burnt soap cannot be removed by hot water.

It is possible to remove the outer crust of soft soap on red rubber articles by placing them in a suitable apparatus where the coating is rubbed off by mechanical means, as for example by means of stiff brushes. The removal of the thin incrustation makes the articles last much longer. If this outer incrustation is not removed, very fine fissures soon form in the surface. These cracks are scarcely noticeable to the naked eye, but soon change into visible fissures.

The cause of this is found in the inaccurate proportionment of the sulphur used for vulcanization. Hence, in the manufacture of red rubber goods it follows as a fundamental rule that the vulcanized articles must not contain any traces of free sulphur. This is an important point and when the proper care is taken to see that only the exact amount of sulphur required for vulcanization is used the difficulties with the articles sticking to the molds and the discoloration of the articles by the soaps are eliminated. A good substance to use in smearing the molds is an aqueous solution of sodium thiosulphate (hyposulphite of soda). This salt is soluble in water at 15 degrees C and the forms are daubed with this solution, while hot. Water glass can be used as well, when it is first diluted with water.

Devulcanizing Waste Rubber

Rubber is devulcanized by means of an emulsoid colloid solution in water of tar, pitch, resin, gum or balsam, preferably wood tar. The rubber is first ground up and boiled with this solution, to which a sulphur solvent such as turpentine and a detergent alkaline solution has been added. Any other known rubber solvent may be used or else alcohol may be employed instead. The boiled rubber is washed and dried, after which it can be subjected to any ordinary treatment. Any fiber that is contained in the rubber may be separated or destroyed in any known way. (British Patent No. 159,987).

Tire Casings

In an English patent, issued recently, (159941), yarns or threads prepared from viscose are used in the manufacture of casings for pneumatic tires. The yarns can be fed from a warping frame to rolls and can be coated with rubber or viscose solution, so that a sheet of adhering yarns is obtained for use in building up the tire casing. Light weft threads of cotton, etc. may be used to hold the yarns in position while they are being coated with rubber, by being interwoven with the warped viscose yarns. Mixed yarns produced from viscose mixed with cotton fibers may also be used.

Tires

British patent No. 159608 describes a process of making tires, treads, etc. from a composition, containing 25 to 40 per cent of raw or reclaimed rubber or mixtures and 75 to 60 per cent of carborundum or a mixture of carborundum and other abrasives with sufficient sulphur for vulcanization. The carborundum is preferably of the variety known as CC or 20, 24 or 30 grit. Solid tires or covers may be made from this composition or it may be applied on the surface by molding or in the form of a band.

Changes in Plantation Rubber After Storage

(Continued from page 169)

The lower grades may also keep in excellent condition for several years. In the better types tensile strength and slope were generally found unchanged, while the time of cure changed less than in first quality rubber, and often showed a small increase. The viscosity generally decreased, sometimes markedly so.

TABLE III.

Sample.	Description.	Tensile Strength.	Standard Time of Cure.	Slope.	Viscosity.
1441 B	December, 1918	1.36	110	36	28
1508	January, 1919	1.34	120	35	24.5
2659 A	Uit veem, Jan., 1921 ..	1.34	>105	36	33
" B	id ..	1.36	105	35	35

We have (not published here) figures for a number of brown crepes, including a sample of earth-rubber, which did not deteriorate in 2 years, and for samples of lump and bark kept for two years in a godown, which showed very satisfactory keeping qualities.

Other samples of lower grades showed a distinct deterioration, which—especially in such types as washings, bark and earth-rubber—is no more than one could expect.

Crepe from matured rubber showed in the main the same behaviour on keeping as first quality crepe; the tensile strength and slope remained approximately the same. The rate of cure, however, contrary to what was found in first quality rubber, generally decreased somewhat; the viscosity lost its very high values, and came down to normal or low ones. While this rapid curing rubber, on keeping, lost in rate of cure, we have given on a former occasion[4] several examples of abnormally slow curing rubbers, which, on keeping, showed an increase in rate of cure, the same was found for slow curing rubber from trees that had had a rest or from the use of formalin. Abnormalities in rate of cure, therefore, in many cases show a tendency to return somewhat to the normal on keeping the rubber—an interesting fact, as it tends to lessen the variability of plantation rubber, if kept for some time.

To show that less careful preparation may result in serious deterioration, we add (Table IV.) some figures for samples of native rubber from Borneo and Djambi, of which the first, being well prepared, does not show any deterioration after four years, while the others lose appreciably in tensile strength and viscosity, especially the last one, which showed a very slow rate of cure (coagulation with alum?).

TABLE IV.

Sample.	Description	Tested.	Tensile Strength.	Standard Time of Cure.	Slope.	Viscosity.
231 F	Good looking smoked sheet from Djambi	Nov., 1916	1.44	>130	37	34
		.. Nov., 1920	1.38	120	37	11
231 B	Good looking unsmoked sheet from Borneo	Nov., 1916	1.42	90	39	17.5
		.. Nov., 1920	1.03	85	40	11.5
231 A	Unsmoked sheet in fair condition	Nov., 1916	1.27	110	39	20
		.. Nov., 1920	1.15	105	38	9
231 C	Mouldy sheet in bad condition	Nov., 1916	1.11	>140	42	11
		.. Nov., 1920	0.80	130	44	5

[4] Archief voor de Rubbercultuur IV. (1920), 166, 177, 196, etc.

NEWS OF THE INDUSTRY

News -- Personals -- Financial -- Building Activities -- New Products

Akron Production Declines

(Special Akron Correspondence)

Unfavorable trade reports are again outnumbering hopeful signs for business in the near future, according to a survey made of the rubber manufacturing district in and around Akron on June 1.

Manufacturing activity at present is confined to molded goods, tires and a few minor lines, with the tire line showing a decided tendency to drop.

In view of this situation, Akron rubber manufacturers are again trimming their working forces and extending the hours of office and other employes who are on salaries. Just how many employes will be laid off in the new retrenchment is undetermined at present. A reduction in working hours and the resumption of the former five-day weekly schedule will come first, it is said.

The first rumblings of an impending cut in the tire production came two weeks ago when some automobile plants cut their output, a few taking drastic steps. Original equipment for cars is a great factor in the tire industry. When original equipment orders are coming in steadily, the production can be kept at a set figure. When these orders drop off, it is said, tire manufacturers are forced to curtail production as the buying power of the automobile owning public has not recovered from the slump.

No one in Akron is ready to predict what the summer months will bring forth. There is more or less talk of some factories closing down for a week or ten days to take inventory over the July Fourth holiday, but no official order for such action has been reported.

There seems to be little doubt, however, but that tire production is due for another slump. One report says that some companies have maintained production at such a high figure (nearly 75 per cent of the peak) that it has filled its warehouses.

The recent reduction in the list prices of tires has failed to stimulate business, it is said. One reason for this may be found by following the advertising columns of the daily newspapers. Tire dealers in many cities are advertising sales of the less known makes at prices well below the list of the established companies. And automobile owners, it is pointed out, have followed the lead of the general public in hunting for bargains.

If the reductions in prices advertised by many of the automobile manufacturers result in increased sales of cars, there is hope that tire production will be maintained. Studebaker officials say their output greatly exceeds that of this time last year, but at the same time they are claiming about 15 per cent of the entire automobile business, excluding Ford.

But no matter which way the trade wind blows, the rubber manufacturers are prepared. If orders keep coming in, they are ready to fill them. If business falls off, overhead items have already been cut to the core so that all that will be necessary will be to lower production and go on the short work-day plan which was in vogue during the great part of last winter until the demand for tires and other products again is felt.

The turning point for the upward swing toward normal business must come soon, everyone agrees.

Employes Bid Farewell to Seiberlings

More than 2,000 Akronites attended the farewell party given Saturday evening,

F. A. Seiberling

by Goodyear employes at Goodyear Hall. May 21, to C. W. and F. A. Seiberling.

The audience was composed not only of Goodyear employes, but of men and women from all over the city.

Bronze tablets fittingly inscribed with the appreciation of the employes for the work performed by the retiring heads of the company were presented to them.

In accepting the gift, Frank A. Seiberling gave a short resume of the history of Goodyear and told of the ideals which had actuated him and his brother from the beginning of the plant.

Charles W. Seiberling asked the same co-operation on the part of the employes with the new management as had always been given him.

Local employes have contributed more than $3,000, and Canadian employes over $500 toward the purchase of an X-Ray machine for the Children's Hospital as a memorial to the retiring officials.

Harry Blythe, manager of the personnel department, presided at the meeting.

The Rubber Situation in Singapore

No reliable figures can be obtained as to the acreage in rubber in British Malaysia, but it has been unofficially roughly estimated that there are 1,250,000 acres planted. The world's visible supply of rubber as of February 1 was: 75,000 tons in America, 56,000 tons in the United Kingdom, 80,000 tons in the Middle East (Ceylon, Federated Malay Straits Settlements, and Netherlands East Indies), 14,000 tons on the continent of Europe and afloat, making a total of 225,000 tons.

The production of rubber in 1920 (including 315,000 tons of plantation) amounted to 360,000 tons, while only 200,000 tons were consumed. The selling price of No. 1 quality rubber is now (March, 1921) 38 cents per pound, which gives an average of not more than 34 cents per pound for all grades. It is doubtful if any estates on the whole peninsula can, on restricted outputs now in force, produce rubber at or below that figure.

In October, 1918, the rubber commission collected returns from 193 estates, and even at that time, and on a full output, only 28 estates were producing below this cost, and costs of production generally have increased since then. The commission made the following analysis of estates according to cost of production on a full output: 1 estate, under 25 cents per pound; 33 estates, over 25 cents and under 35 cents; 73 estates, over 35 cents and under 45 cents; 48 estates, over 45 cents and under 55 cents; 24 estates, over 55 cents and under 65 cents; 11 estates, over 65 cents and under 75 cents; and 3 estates, over 75 cents per pound. It is therefore clear that every estate in the peninsula is producing at a loss.

Society of Testing Materials to Meet

The twenty-fourth annual meeting of the American Society for Testing Materials will be held in the New Monterey Hotel, Asbury Park, N. J., beginning with committee meetings on Monday afternoon, June 20 and closing with an evening session on Friday, June 24.

In addition to the regular business and committee meetings the gathering will be enlivened by a number of entertainment features. These will include an informal dance and smoker on the evening of Tuesday, June 21 at which time the president's address will be presented. The fifth annual golf tournament will be held on the afternoon of Friday, June 24 on the links of the Deal Country Club. A tennis tournament will also be held on the same date while other entertainment features will be scheduled.

News from the Rubber Metropolis

Portage in Bankruptcy—Seiberling Denies Rumors—Miller Announces Changes—Receivership for B. & W.—Goodyear to Close for Inventory—Plants to Cut Summer Vacations

Portage in Bankruptcy

(Special Akron Correspondence)

An involuntary petition in bankruptcy was filed against the Portage Rubber Co., of Barberton, Ohio, in the United States District Court in Cleveland on Tuesday, May 31. On the same day Judge Westenhaver appointed George D. Bates, Akron banker, and John W. Maguire, vice-president and general manager of the Portage company, as receivers pending the election of trustees.

The petitioning creditors were all Akron firms and were as follows: Wellman-Seaver-Morgan Co., $22,266; Adamson Machine Co., $1,250, and the Factory Oil Co., $71. Assets of $4,500,000 are given and it is said the company has orders for tires amounting to approximately $5,000,000. Debts aggregating $1,700,000 are listed in the petition.

The petition further alleges that an act of bankruptcy was committed when the company permitted seizure under a warrant of restraint by Collector of Internal Revenue Weiss of all property and assets because of $30,000 due as excise taxes on tires and tubes. In its answer the Portage Rubber Co., admits all facts as stated in the petition.

The receivership is of special importance and significance to the rubber industry in view of the fact that it was forced by claims against the company by fabric manufacturers who insisted upon the collection of damages for the alleged failure of the Portage officials to take fabric contracted for during the spring and winter of 1920 when the price was practically double that of today. It is stated that these damage claims amount to approximately $1,500,000.

The fact that these manufacturers insisted upon payment from the Portage company is taken to mean they will pursue a similar course in dealing with all companies failing to fulfill contracts. It is also stated that a number of crude rubber brokers are in a somewhat similar situation in their relations with tire companies.

In a recently issued statement, President M. S. Long, of the Portage Rubber Co., said:

"The company's present situation was brought about largely by the claims made against it by certain fabric manufacturers for damages for the failure of the company to take fabric which it was alleged it had contracted for during the winter and spring of 1920, at a time when the price of fabric was more than double what it is at present.

"If these claims of the fabric people are allowed, the company would suffer a loss of more than $1,500,000, which loss would more than equal its entire indebtedness.

"Since the early part of last fall the officers of the company have been endeavoring to effect a settlement on some reasonable basis of these claims of the fabric people. A plan had been worked out, satisfactory to the company's bank creditors and to practically all its merchandise creditors, but some of the fabric people who are making the largest claims against the company, refused to give their assent, and it was this condition that brought about the filing of the petition in bankruptcy against the company and, as this proceeding offered the quickest and easiest solution of the company's problems, the company will not contest the adjudication in bankruptcy.

"The value of the company's property and assets, under ordinary circumstances, would far exceed its admitted indebtedness.

"The receivers appointed by the Court are both men of high standing, one an experienced rubber manufacturer and the other a well-known banker and business man, and I feel sure, if the plant is permitted to be operated under their management, the interests of the creditors will be conserved and the greatest possible amount, which I hope will be one hundred cents on the dollar, paid on every legitimate claim."

Seiberling Denies Rumors

(Special Akron Correspondence)

Denial has been made at the offices of F. A. Seiberling, former president of the Goodyear Tire & Rubber Co., that he will take over the New Castle Rubber Co., of New Castle, Pa., recently purchased for $103,500 by R. C. Ellsworth, former secretary to Mr. Seiberling.

The report gained circulation through the fact that Mr. Seiberling was present when the sale was made.

The purchased plant is valued at $500,000 and is considered a good buy despite present conditions.

The property includes two large equipped factory buildings, seven and one-half acres of ground, an office building and three dwellings.

Miller Announces Changes

(Special Akron Correspondence)

Announcement has been made of the resignations of R. E. Wolcott as assistant credit manager and of Charles H. Watterman as purchasing agent of the Miller Rubber Company. Mr. Wolcott formerly was with the Firestone Tire & Rubber Co. and joined the Miller forces over a year ago. Watterman has been with Miller for several years.

H. Parker Lowell who was editor of *Miller Talk*, the factory publication of the Miller Rubber Co., also has resigned. He is now sales manager of the City Print Shop, of Akron.

A twenty per cent reduction in the office personnel of the Miller Rubber Co. is taking place this month. The Miller plant, it is reported, will operate on a tentative basis of 3,000 tires daily until October 1.

Receivership for B. & W.

(Special Akron Correspondence)

The B. & W. Rubber Co. which last year operated a small plant on the outskirts of Akron has been thrown into the hands of a receiver through a suit filed in common pleas court in Akron. W. T. Akers has been appointed receiver and his bond fixed at $5,000.

Action which brought the receivership was started by Louis V. Bozner of Akron who claims the company owes him $2019.65 for work, labor, commission for the sale of stock and for money advanced. He was employed as superintendent.

Goodyear Board of Control Abolished

(Special Akron Correspondence)

The old board of control at the Goodyear Tire & Rubber Co. has been abolished under the reorganization headed by E. G. Wilmer, the recently-elected president. This board was established five years ago with W. D. Shilts as chairman. Other members were H. B. Hamlen, S. A. Falor, and W. H. Osburn. Shilts remains as assistant secretary of the company under the reorganization.

George A. Einbecker of Milwaukee becomes controller of the company and has consolidated much of the work of that department. C. L. Weberg and A. F. Egglestone will be his assistants.

Plants Cut Summer Vacations

(Special Akron Correspondence)

The small forces now maintained in the general offices of the big rubber companies in Akron have forced the executives to put through orders limiting vacations this summer to one week. The usual summer vacation heretofore has extended two weeks. Not only are vacations cut in length, but the new orders also limit the number eligible for vacations.

Goodyear to Close for Inventory

(Special Akron Correspondence)

Announcement has been made in Akron that the East Akron factories of the Goodyear Tire & Rubber Co. will be closed for ten days from June 25 to July 5 for the observance of the Fourth of July holiday and the taking of the semiannual inventory. Factory employes who are eligible for vacations have been asked to take the same during the week the plants are closed. The general office will continue to work during the week, but will be closed as usual July 4.

Steffen with McCreary Tire

Announcement has been made of the appointment of Homer C. Steffen as sales manager for the McCreary Tire & Rubber Company, Indiana, Pa. Mr. Steffen has been connected with the tire industry for a number of years in various sales capacities, and is well known among the retail trade. Before becoming connected with the McCreary organization, Mr. Steffen achieved success in both wholesale and retail distribution of tires, and is now working out plans for greater expansion of sales on McCreary hand-built tires and tubes in the east.

Temporary Receiver Appointed

Judge John W. Banks, of the Superior Court of Connecticut, on May 24 issued an order appointing the City National Bank, of Bridgeport, Conn., temporary receiver of the Kelly Tire & Rubber Co., New Haven, Conn., under $1,000 bond.

It is stated that the action was taken in order to preserve assets and protect creditors. The obligations of the company are given as being approximately $140,000 with contingent liabilities of about $35,000. The factory and equipment is conservatively appraised at $850,000.

The Martin Tire & Rubber Co., of New Haven, Conn., is the holding company but inasmuch as the title to the property and all the assets of the corporation are legally vested in the Kelly Tire & Rubber Co. the application for the receiver was made by the latter corporation. It is stated that plans for re-financing have been carefully considered and will be put into execution immediately and it is hoped that the receivership may be vacated by August 1.

Akron-Universal Absorbs Superfix

At a meeting of the officers and directors of the Akron-Universal Tire & Rubber Co., Medina, Ohio, held recently, arrangements were completed whereby the Superfix Rubber Co., of Elyria will move to Medina and be absorbed by the Akron-Universal as soon as the necessary legal details can be worked out.

Under the new arrangement the entire Superfix plant was to have been moved to Medina June 1, and the manufacture of all their products will be in conjunction with the Akron-Universal at the latter's new plant.

The Superfix Rubber Co. are also owners of a nationally known and advertised product, "Superfix", tire repair. They also have been making "Tufferfix", an identical product of the Medina company.

E. C. Brandt, inventor of the "Superfix" rubber products, will move to Medina and be in charge of the manufacture here.

Kaufmann Succeeds Ryckman

Announcement has been made of the dissolution of W. G. Ryckman Co., dealers in rubber and crude materials at 77 Broad St., New York. C. B. Kaufmann is the successor.

L. A. Duffy, Inc., Moves

L. A. Duffy, Inc., who recently succeeded Duffy & Sears, has moved from 133 Front St. to 15 William St., New York.

Duplex Tire to Build

Excellent shipping facilities and the proximity to zinc oxide plants are given as the reasons for locating in Joplin, Mo., by the Duplex Tire & Rubber Company, the incorporation of which was accomplished May 21. The company has an authorized capital of $1,000,000, it was said by officials of the company.

A site of six acres at the corner of Seventh and Oliver streets has been acquired and according to R. W. Crissey, president of the company, a brick and steel factory 300 by 100 feet will be erected. In addition to this building there will be structures for housing a power plant, offices and laboratory.

Traffic Representatives to Meet

Traffic representatives of manufacturing companies which distribute their products through public merchandise warehouses will meet in convention at the William Penn Hotel, Pittsburgh, Pa., on June 16 and 17.

The convention will be held under the auspices of the Shippers' Warehousing and Distributing Association, which was organized at Chicago a year ago for the general purpose of effecting standardization and simplification of forms, documents, practices, rules and regulations in the business relationship between the manufacturers and the public warehouse industry.

Uniformity, overages and shortages, taxation on stocks in warehouses, methods of billing, systems of reporting of stocks—these will be some of the general subjects which will be discussed at the Pittsburgh convention. Solution of the various problems with which shippers are confronted in distributing products from factory through the public warehouse to retailer and consumer will work toward cutting down the costs of distributing.

Manufacturing companies which route goods through warehouses are eligible to membership in the Shippers' Warehousing and Distributing Association, and their representatives will be welcomed at the Pittsburgh convention regardless of whether they join the organization. Details regarding the convention may be obtained by addressing the secretary, Kent B. Stiles, 239 West 39th Street, New York.

New York Rubber Promotes Palmer

Announcement has been made of the appointment of Walter E. Palmer as secretary of the New York Rubber Co., 84-86 Reade St., New York. Mr. Palmer has been for the last twenty-one years in the plant at Beacon. He succeeds Henry Montgomery who recently resigned.

Connecticut Rubber Plants Close

Notices have been posted in all of the rubber factories at Naugatuck, Conn., that, beginning May 26 they will be closed for a period of five weeks, and that upon resuming operation the first ticket will be made on July 5. The factories are those of the G. I. R. Rubber Glove Company, footwear department, carton department and sundries department, and the factories of the G. M. R. Shoe Company. These companies employ about seventy per cent of the adult population of the place, and for some time past the plants have been operated only four days a week. Lack of orders is given as a reason for curtailment.

Wildman Plant Contracts Awarded

An announcement has been made by the Wildman Rubber Company through its president, W. W. Wildman, that the contract for the first unit of its $1,000,000 tire plant had been awarded to the Bay City Stone Company, work to start at once upon the building, which will be erected upon the company's site of sixty-three acres at Bay City, Mich.

The building will be rushed to completion at the earliest possible time so as to have the plant in full operation by fall, according to Mr. Wildman.

When completed, the Wildman Rubber Company will have a capacity of 2,500 tires and 5,000 tubes a day. The tubes will be principally of the new invention of Mr. Wildman, the self sealing inner tube. The local plant will have ample room for expansion should the business warrant it. All future additions that may be made to the present contemplated building can be made without interrupting the work in the slightest degree owing to the construction of the buildings.

Goodyear Bonds Offered

Notice has been sent to both the common and preferred stockholders of the Goodyear Tire & Rubber Company, calling their attention to their right to subscribe to the company's $27,500,000 ten-year 8 per cent. sinking fund debentures, due May 1, 1931, with common stock attached, at 99 and accrued interest.

At the offering price the debentures would yield 8.80 per cent. if held until maturity, when they are to be paid at 110 and interest. The debentures entitle the holders to receive on and after May 1, 1922, voting trust certificates for common stock without par value at the rate of one share for each $100 face amount of debenture bonds.

The entire $27,500,000 debenture bonds have been underwritten by a group of banks and investment dealers, subject to this prior right of subscription by the stockholders.

The company reports that for the last week in May sales to dealers were the largest since January, and casing sales showed 50 per cent. increase over the average sales for the same months in February, March and April, while tube sales were 40 per cent. greater.

H. A. Daggett Incorporates

(Special Trenton Correspondence)

H. A. Daggett Company, Inc., of Jersey City, N. J., has been incorporated at Trenton, N. J. with $100,000 capital to deal in rubber. The incorporators are Cornelius A. Cole, of Hackensack, N. J.; Robert A. Van Voorhis, of Jersey City, and Arthur R. Oakley, of Pearl River, N. Y.

Smith Chemical Moves

The Smith Chemical & Color Company, Incorporated, has announced its removal from its office at 116 Nassau st. to a more commodious location, 257-259 Water st. corner of Peck Slip, New York City, where their enlarged offices and warehouse will be located.

News from the Trenton Manufacturers

Trenton Plants Increase Output—Joseph Stokes Operating in Canada—Receiver for Trent Rubber—Robert E. Oakley Dies—Climax Rubber Incorporated—Karl G. Roebling Passes Away

Trenton Plants Increase Output

(Special Trenton Correspondence)

The Trenton rubber manufacturers are experiencing a boom in the tire and tube industry and expect conditions to gradually improve Two of the Trenton plants are working night and day.

The Acme Rubber Manufacturing Company is operating its plant night and day. to take care of the orders. Day employes are working fifty-five hours a week, while the night crew is working fifty hours a week. The company recently erected a one story addition, 90 by 30 feet and this is being used exclusively to the manufacture of moulded hose. The tire department is being operated at 10 per cent capacity while 100 hands are employed on the night shift.

The Globe Rubber Tire Manufacturing Company is also being operated day and night and its production amounts to practically 1,000 automobile tires a day. This concern is employing about 500 men on full time.

The Ajax Rubber Company is operating 50 per cent of normal. One of the officials told a representative of THE RUBBER AGE that the concern was behind in orders and that the prospects for the future looked good. The Ajax Company has one of the largest tire plants in this section.

The Zee Zee Rubber Company, with a plant at Yardville, N. J., has nearly doubled the output and the concern expects to place more hands at work shortly. The traveling salesmen in the employ of the Zee Zee company report orders increasing.

New Jersey Standardizes Hose

(Special Trenton Correspondence)

The New Jersey Fire Chief's Association has endorsed a standard thread for fire hose in order that one municipality may aid another in case of fire. The hose with a diameter of 3-1/16 inches and with seven and a half threads to an inch, which is said to be the standard set by the United States government, was favored.

Joseph Stokes Operating in Canada

(Special Trenton Correspondence)

The new plant of the Joseph Stokes Rubber Company, Limited, has been completed at Welland, Ontario, Canada, and is now in operation. The plant was erected at a cost of $250,000 and is the first and only building to be designed, constructed and equipped for the manufacture of hard rubber products in Canada.

The plant, which was erected by the Karno-Smith Company, Trenton, N. J., is situated on eight acres of land that were laid out for future expansion. The building is constructed of brick, steel and timber. It is 160 feet long and 60 feet in width, with a coal pocket and trestle overhead which connect with a siding of the Grand Trunk & Wabash Railroad. The building was designed for its particular purpose and constructed in such a modern manner that requires only the minimum rate of insurance. All the machinery is of modern design. The Canadian Company is the outgrowth of the Joseph Stokes Rubber Company of Trenton and has the same officers as the Trenton concern, but its affairs are entirely separate and apart from the Trenton concern. It has a charter granted by the Dominion government.

Receiver for Trent Rubber

(Special Trenton Correspondence)

The United States District Court has authorized John O. Bigelow, of Newark, N. J., receiver of the Trent Rubber Company to dispose of the company's plant, equipment, etc., at public sale at the factory, Enterprise avenue, Trenton, N. J., on Wednesday, June 22. The sale will comprise all the assets of the company as an entirety and as a going concern and includes all formulae, trade names, goodwill, water rights, and accounts, insurance policies, furniture and fixtures, finished goods, goods in process of manufacture, machinery, automobiles, raw material, etc.

When the receiver was appointed H. A. Ludeke, president of the company, contended that the corporation was solvent, but that because of inability to get its plant in operation at the time desired it lost considerable trade. I. A. Worthington, of Trenton, is vice-president of the company, and E. H. Unkles, of Trenton, secretary-treasurer. The company was incorporated in May, 1919, under the name of the Atlas Tire & Rubber Company and later changed its name to the Trent Rubber Company. The company manufactures tires and has a plant erected at a cost of $320,719.

Robert E. Oakley Deceased

(Special Trenton Correspondence)

Robert Edward Oakley, who for a number of years was associated with his brothers, Clifford H. and Lawrence M. Oakley in the rubber business, died recently at his home 92 Deutz avenue, Trenton, N. J. He is survived by a wife and one son and daughter. The interment was at Trenton, N. J.

Augeron Co. Incorporates

(Special Trenton Correspondence)

The Augorcon Co., of Passaic, N. J., has been incorporated at Trenton, N. J., with $1,000,000 capital stock to deal in rubber, lumber and coke. The incorporators are Dudley L. Gordon and Thomas A. Hopkins, of Passaic, and Joseph S. Connelly, of Providence, R. I.

Karl G. Roebling Passes Away

(Special Trenton Correspondence)

Karl G. Roebling, president of the John A. Roebling's Sons Company, and secretary and treasurer of the Woven Steel Hose & Rubber Company, Trenton, N. J., dropped dead while playing. golf at the Spring Lake, N. J., Country Club on May 29. Death was due to apoplexy. Funeral services were held at his late home, 211 West State street, Trenton, N. J., the interment being in the Roebling family plot at the Ewing, N. J., cemetery.

Mr. Roebling had been a sufferer from nervous trouble for some time. Last fall he took a long sea trip along the coast of South America and returned much improved. He is survived by a widow and three children.

Mr. Roebling was born in Trenton, July 7, 1873. He was educated in the public schools and took a college preparatory course at the Lawrenceville school. He was graduated from Princeton University in the class of 1894. Following the death of his father, Ferdinand W. Roebling, four years ago he was made president of the John A. Roebling's Sons Company. He was a director in a number of industrial concerns and was a member of many clubs.

William J. B. Stokes Dangerously Ill

(Special Trenton Correspondence)

William J. B. Stokes, president of the Home Rubber Company, treasurer of the Thermoid Rubber Company, and vice-president of the Joseph Stokes Rubber Company, Trenton, N. J., was stricken with paralysis on May 29 at his home, 219 West State street, Trenton, N. J. His condition is reported as being serious. This is the second stroke he has suffered. He was stricken some time ago but finally recovered and was able to attend to his many business interests again.

Climax Rubber Incorporated

(Special Trenton Correspondence)

The Climax Rubber Company of New Jersey has been incorporated with $1,000,000 capital stock to deal in rubber goods. The incorporators are J. Phillip Rarr, Newark, N. J.; William J. Gilbredsm and W. S. Rexford, of Jamestown, N. Y.

United & Globe Receives Order

(Special Trenton Correspondence)

The United & Globe Rubber Company has been fortunate in receiving the contract for a large order of rubber fire hose that has increased the working capacity of that department at a time when the rubber industry was regarded as somewhat dull. The contract was for 38,000 feet of hose from the city of Philadelphia and will be used by the fire department of that city. It is the regulation size fire hose manufactured by the Globe company and being used by many cities throughout the United States.

John S. Broughton, president of the Globe Rubber company, states that the hose department of his concern is now operating 100 per cent capacity.

News of the Rubber Association

Rubber Association Committees Meet—To Compile Statistics on Rubber Sundries Industry—L.C.L. Rating Reduced Changes in Ratings on Rubber Manufactured Products

Rubber Association Committees Meet

A meeting of the executive committee of the Rubber Sundries Manufacturers' Division of the Rubber Association of America was held on Tuesday morning, May 3, and the meeting of the division was held on the afternoon of the same day at the Yale Club, New York. The Rubber Band, Packing and Shipping and Membership Committees submitted reports and other subjects of interest to rubber sundries manufacturers were discussed. The sub-committee of the Rubber Sundries Division, which was appointed to progress the statistical work of that Division, met at the Rubber Association offices on Thursday, May 19, to complete its activities in preparing the proper form for use in the contemplated statistical work.

The executive committee of the Tire Manufacturers' Division held its regular monthly meeting on Wednesday, May 11, at the association offices. A number of important matters were discussed.

A meeting of the executive committee of the Foreign Trade Division was held at the Yale Club on Friday, May 20. The session was given over to a lengthy discusion of the activities of that division and the work of the Foreign Trade Bureau of the association.

The Specification Committee, of the Mechanical Rubber Goods Manufacturer's Division met on Friday, May 20, at the association office and devoted the whole day to the consideration of a large number of routine matters.

The recently appointed Crude Rubber Committee of the association met on May 18th, and it being the first meeting of the committee, no definite action was taken and the session was given over to the consideration of the future work of the committee.

To Compile Statistics on Rubber Sundries Industry

A meeting of a sub-committee of the Rubber Sundries Manufacturers' Division of the association was held recently, and forms to be used in a statistical service for that division were prepared.

The forms have been transmitted to the Executive Committee of the Division with the recommendation that they be used in the work beginning with the month of May, 1921, and it is believed the Executive Committee will recommend to all members that they participate.

The plan contemplates the monthly compilation of total figures respecting inventory, production and shipments, of the following articles: bands; bulbs and bulb syringes; cushions, invalid and operating; catheters; colon tubes; gloves, dipped and hand-made; rectal tubes; stomach tubes; fountain syringes; water bottles.

L.C.L. Tire Rating Reduced

The Consolidated Classification Committee, representing carriers throughout the country in freight classification questions, has granted the application of the Traffic Committee of the association for a reduction in the rating applicable on pneumatic tires in less than carloads in paper wrapped bales or bundles from one and one-half times first class to first class, to become effective on or about July 20, 1921, in Official and Western Classification Territories.

The Southern Classification Committee having direct charge of this question in the South has presented a similar proposal to southern lines for their approval.

Members of the Association will be kept in close touch with developments in the question in southern territory.

Changes in Ratings on Rubber Manufactured Products

As a result of hearings held by the Consolidated Freight Classification Committee, representing carriers in all freight territories, the following changes in ratings on rubber manufactured products will be made effective, to the extent shown below, on or about July 20, 1921.

Old or Worn-Out Tires.—Under the classification specifications, old worn-out tires returned to factories when in bundles of two or more tires, have been accorded fourth class rating. Because of the impracticability of bundling large, heavy tires, the Consolidated Classification Committee will establish rating of fourth class applicable in all territories on so-called scrap tires, each weighing 50 pounds or over, when shipped loose.

Rubber Shoddy (Reclaimed Rubber).—There is considerable movement of rubber shoddy in less than carloads between factories, and the consolidated classification now requires this article to be shipped in bags, bales, barrels or boxes but the Official Classification Committee will establish regulations permitting the shipment of rubber shoddy in less than carloads between points in Official Classification territory (i.e., points east of the Mississippi and north of the Ohio rivers), when shipped in rolls or slabs.

Rubber Covered Rollers.—The present classification specifications for rollers covered with new composition or rubber are second class on shipments in any quality. As a heavy movement of these articles has developed in carloads between points in official classification territory, the Official Classification Committee has agreed to the establishment of a carload rating on these articles of fourth class, with minimum carload weight of 30,000 pounds.

Monthly Mechanical Goods Statistics Started

Those members of the Mechanical Rubber Goods Manufacturers' Division of the association who have signified their willingness to participate in the statistical plan covering the sales value of shipments of various mechanical rubber goods and the consumption of raw material involved thereby, have been requested to forward their report covering the month of April to the association office in order that the work might be progressed as speedily as possible.

New Plant for Paul Rubber

The Paul Rubber Company of Chicago, is erecting a new manufacturing unit in Salisbury, S. C., for the production of automobile tires, and ultimately bicycle tires and hard rubber goods. The new building will be 265 x 60 feet, with two wings going back about one hundred feet, and one story in height. It will be of steel and brick construction and will be furnished with modern equipment throughout.

The company at present is operating a factory in Chicago, but when the Southern factory is in operation the main headquarters of the organization will be located there. New tires will be produced at Salisbury, while the Chicago plant will turn out rebuilt tires.

A daily output of 500 tires and 1,000 tubes is designed for the Salisbury unit, with one shift working. Officers of the company are M. W. McConnell, president; E. McConnell, vice-president and treasurer; and M. L. Miller, secretary. In addition to the officers, directors of the company are W. C. Maupin and W. J. McDaniels, of Salisbury.

Thermoids Enter New Combine

The Thermoid Rubber Co., of Trenton, N. J., manufacturers of the Thermoid universal joint, has affiliated with the Detroit Pressed Steel Co., Disteel Wheel Division. The Thermoid Company will, under the agreement, manufacture the flexible fabric discs used in the joint, and the Detroit Pressed Steel Co. will make the metal part of the joint. The latter company will also take care of the assembling and the sales of the product.

New Frictioning Oil

The Condensite Company of America, Bloomfield, N. J., has recently sent out to the rubber trade an eighteen page booklet entitled, "Halowax in the Rubber Industry" in which the properties of Halowax Oil are set forth. This is a preparation used in the treatment of fabric to improve the "frictioning" or bonding of rubber to it.

The Condensite Company has spent considerable time in laboratory experimentation in order to work out a substance that would add to the life of a tire fabric. The action of this oil is said to soften the rubber, so that it penetrates the fabric structure with great ease. The life of the fabric is increased by limiting the tendency of the fibers to saw or cut each other, as is the case in tires where the fibers are constantly flexed.

Copies of this booklet will be furnished tire manufacturers and others who may be interested, by addressing the Condensite Company of America, Bloomfield, N. J.

Personals of the Trade

Graham Factory Manager for Mason—Hudson Stockholders Elect—Schrader Promotes Geil—Hendricks Heads Publicity Club—Star Rubber Personnel Changes—Fred W. Morgan Passes Away

Graham Factory Manager for Mason

The Mason Tire & Rubber Co., of Kent, Ohio, has recently appointed T. G. Graham to the position of factory manager of the tire division. Mr. Graham has had wide and practical experience in the manufacture of tires and has been exceedingly

T. G. Graham

successful in similar positions he has held throughout the industry.

Mr. Graham's initial experience in the tire industry was obtained with the Goodyear Tire & Rubber Co. where he was identified with the service department. While with that firm he took a factory course and after a short time spent in the sales division he was transferred to the mechanical experimental department and later to the tire experimental department.

After leaving Goodyear he became identified with the Falls Rubber Co., of Cuyahoga Falls, Ohio, as production manager. From there he went to the Inland Rubber Co., of Chicago, as factory manager, a position he held prior to joining the Mason forces.

Hudson Stockholders Elect

The first annual meeting of the stockholders of the Hudson Tire & Rubber Corporation, Yonkers, N. Y. was held Monday evening, May 16, 1921, about 200 of the 1200 stockholders being present in person.

The corporation was incorporated on April 19, 1920, with a capitalization of $1,000,000, and a statement submitted at the meeting by the treasurer showed that 40,982 shares of stock had been sold and that the net worth of the corporation as of April 30, last, was $504,310. It was also reported that work on the factory buildings was progressing satisfactorily and that the corporation would be producing tires some time this summer.

The three directors of the concern were re-elected for the ensuing year by unanimous vote and at the directors' meeting the following officers were elected: William M. Doucette, president; Harry B. Seymour, vice-president and treasurer; Ulrich Wiesendanger, secretary.

Schrader Promotes Geil

The policy of A. Schrader's Son, Inc., of advancing to positions of trust young men whom they have specially trained in their own organization has resulted in the appointment of Harry E. Geil to the post of manager of the Schrader Chicago office. Mr. Geil entered the employ of the Schrader firm in March 1916 as a junior clerk in the accounting department. Upon evidence of unusual executive ability he was transferred to the order department and from there was promoted to the assistant-manager's office.

He enters upon his new duties after intensive training in this later position, and is thus equipped to carry out the idea of efficient service to customers which is characteristic of the Schrader house.

Diamond Holfast Directors Elected

W. W. Griffin, president of the Griffin Construction Company, and G. E. Russell, president, Russell Electric Company, were elected to the board of directors of the Diamond Holfast Rubber Company, Atlanta, Ga., at its monthly meeting. With the addition, the board now consists of H. I. Diamond, Herman Ditt, W. W. Griffin, G. E. Russell, S. B. Turman, C. A. Tappan and G. W. White, all prominent Atlanta business men.

Elisha Stout Dies

(Special Trenton Correspondence)

Elisha Stout, formerly associated with the Lambertville, N. J., Rubber Company, died at his home at Asbury Park, N. J., on May 8 at the age of 83 years. Mr. Stout was a pioneer rubber man and was connected with the Lambertville Company for a number of years, having been patentee of the famous "Snag Proof" rubber boot. During the Civil War he served in the navy. He is survived by five daughters. Mr. Stout quit the rubber business some years ago and removed from Lambertville to Asbury Park.

Hendricks Heads Publicity Club

George B. Hendricks, publicity director for the Fisk Rubber Company, Chicopee Falls, Mass., was elected president of Springfield, Mass., Publicity Club at the annual meeting in Hotel Highland. Mr. Hendricks, elected vice-president last year, has served as acting president since the resignation of Arthur T. Gary a few months ago.

Star Rubber Personnel Changes

On account of ill health and the immediate necessity of rest from active duties, O. L. Weaver, who has been connected with the Star Rubber Company, Akron, Ohio, since its organization, tendered his resignation as sales manager to the board of directors, effective June 1st.

A. G. Partridge, formerly vice-president and general sales manager of the Firestone Tire & Rubber Company, of Akron, assumed the office of vice-president and sales manager of the Star Rubber Company on that day.

Mr. Weaver will continue as a director

A. R. Partridge

and secretary of the company and render such assistance to Mr. Partridge as his health will permit.

Fred W. Morgan Passes Away

Fred W. Morgan, founder of the firm of Morgan & Wright, manufacturers, died suddenly May 27 of angina pectoris at his home, 2678 Washington boulevard, Chicago.

Mr. Morgan was born in New York March 20, 1854, and came to Chicago forty-five years ago. He became interested in rubber and his experiments in manufacturing tires resulted in the founding of the firm of Morgan & Wright. His partner was Rufus Wright who died some years ago. After years of successful business at May and Lake streets, the firm of Morgan & Wright changed hands and became identified with United States Rubber Company.

He is survived by his widow Mrs. Mary Wright Morgan, the daughter of his former partner; two daughters, Mrs. R. E. Watrous and Mrs. C. A. Tilt, and two sons, Ernest and Hiram.

Ball Joins Vanderbilt Forces

John M. Ball, formerly chemical engineer with the Manhattan Rubber Mfg. Co., Passaic, N. J., has taken up sales work with the R. T. Vanderbilt Company, 50 East 42nd Street, New York, manufacturers of compounding ingredients for the rubber trade.

Death of A. G. Batchelder

In the tragic death of Amos G. Batchelder, executive chairman of The American Automobile Association, in the airplane accident near Morgantown, Md., on May 28, the good roads movement loses one of its most ardent and capable advocates. The work he did in helping the passage of the Federal Aid Road Act in 1916 gained him general recognition throughout the country. This act brought the Government into road building after an inactive period of seventy-five years.

He was extremely popular in all branches of the automotive industry, and was particularly well-known among the tire manufacturers. A native of Akron, Ohio, he became interested in the industry back in the days when bicycling was in its heyday. He was finally appointed chairman of the National Bicycling Association, which controlled bicycle racing throughout the country. Later, he foresaw the future in store for the automobile and after serving as editor of *The Automobile* for a time, he organized The American Automobile Association of which he was the active head at the time of his death.

Latterly he had turned his interest to aviation. He had visions of great national highways to be used by aviators and motorists alike, believing such use would be practical if enough convenient landing places were provided.

It seems likely that the lack of a landing place cost Mr. Batchelder and his companions their lives on the ill-fated flight from Washington to Langley Field in a Curtiss Eagle Ambulance Airplane in a terrific electrical storm.

Hoblitt in Charge of Ajax Sales

F. E. Dayton, general sales manager of the Ajax Rubber Co., Inc., has resigned from that position and will be succeeded by Frederick M. Hoblitt, who has only recently joined the Ajax organization. Mr. Hoblitt was formerly the president and general manager of the Quick Tire Service Co. and previous to that he had been connected with the Cadillac, Alco and other automotive companies.

Mr. Dayton, who has been with the Ajax Rubber Company for the last ten years, will turn to something entirely different according to his own statement. He will enter the real estate field and his big job well be to merchandise the new Fisk building to a list of prospective tenants, among which many prominent automotive concerns are numbered. The Cross and Brown Co. of New York is the real estate agency through which Mr. Dayton will work.

Altenburg Tire Equipment Changes

The Altenburg Tire Equipment Co., which recently erected a factory in Davenport, Iowa, has been reorganized. V. D. Sears, for four years with the company, becomes president and sales manager and Ralph P. Hayes, production sales manager of the Moline Plow Co. is vice-president and general manager.

Kelley with California Goodyear

Milton S. Kelley has been appointed assistant treasurer of the Goodyear Tire & Rubber company of California, Los Angeles, succeeding D. J. Koonce, resigned to enter another line of business. Mr. Kelley is a certified public accountant of the state of California. Five years ago he became connected with the firm of Price, Waterhouse & Co., and left them early in 1920 to accept the position of accountant executive of the Goodyear Tire & Rubber Company of California. As assistant treasurer he now has charge of accounting both in the general offices at Los Angeles and in the thirteen branch offices in the West and Northwest.

Rubber Exposition Opens

Fifty-seven states and governments, among them Brazil, Peru, Colombia and Sao Paulo, are participating in the fifth international exposition of rubber and other tropical plants in the Royal Agricultural Hall, which opened privately June 2 and was opened to the public June 3.

Sir Ernest Birch, chairman of the executive committee in his address said that whereas in 1905 there were only 116,000 acres planted to rubber in the entire world, 3,300,000 acres now were under cultivation.

At the international conference in connection with the exposition papers will be read by leading scientists and experts from all parts of the world dealing with vegetable oils, cocoa and a large variety of other tropical products. The exposition will close June 17.

Interlocking Files Suits

Filing seventy-two suits for the collection of alleged unpaid balance on subscriptions to the stock of the Interlocking Cord Tire & Belt Co., Elihu Harpham, receiver for the company recently commenced action for a total of $15,342 in common pleas court. Two months ago thirty-six suits were filed and are now being settled in the courts.

Each of the suits allege that the defendant subscribed for the company's stock and then failed to pay the full subscription. The amounts sued for average $150.

Kelly Heads Quaker City Tire Sales

The Quaker City Rubber Co., Philadelphia, Pa., recently announced the appointment of F. N. Kelly to the position of director of the tire sales division. A. W. Thomas will be associated with Mr. Kelly in the marketing of the company's products. Announcement is also made to the effect that New York offices have been opened at 1664 Broadway.

Batavia Moves New York Offices

The New York offices of the Batavia Rubber Co., formerly located at 562 Fifth Ave., have been recently removed to 30 East 42nd St. M. H. Bochow, president of the company, will make his headquarters at this address.

Tapping Restrictions Proposed

Persistent rumors are current to the effect that a six months total restriction of tapping will be proposed with a view of furnishing opportunity for the disposal of as large a part as is possible of the enormous visible supply of rubber. A. T. Macer writing in the London *Financial News* says:

"It is evident that some action must be taken to stop the 'rot' in the rubber industry in addition to the limited restriction scheme of the Rubber Growers' Association which has been in force since November last. This scheme imposes a voluntary restriction of crop, among the signatories, to 75 per cent of the estimated crop. A restriction to have had effect should have been to not less than 50 per cent of the last year's crop. Discussions are now taking place as to attempting a complete cessation of tapping for a period, or to curtail production to 100 or 150 pounds per acre. It should not be forgotten that in addition to this voluntary restriction the fall in price is bringing about a cessation of tapping over considerable areas on which production costs largely exceed the selling price of rubber today.

"To my mind, the permanent need of the industry is to stabilize the product at such a low price that the uses of rubber will be enormously increased, and the industry requires a central organization or trust with the financial strength and power to deal with a large bulk of rubber. If such an organization existed it could make contracts at low prices with potential new users of rubber for long periods of years ahead. It could also, by collective selling, deal with the difficult question of selling rubber, possibly on credit, to meet the needs of the impoverished European countries, such as Russia. Such a trust would be formed by a membership of companies and estates, who would enter into agreements to give the whole of their production for a term of years to the trust to handle. The trust would regulate the output of its members in periods of three months, and the output of the trust would be the estimated needs of its market as a numerator over, say, the last year's aggregate production of its members as a denominator."

New Rubber Brokerage Firm

Horn & Leavitt is the name of a new firm of crude rubber brokers which is now located at 50 Broad St., New York. Frederick J. Horn was for a number of years with the crude rubber department of W. R. Grace & Co., in both New York and Akron and was at one time with Fred Stern & Co., Akron. Edward W. Leavitt was formerly with Fred Stern & Co. and prior to that was identified with the B. F. Goodrich Co. in Akron.

Martin Tire Moves Offices

The Martin Tire Corporation, whose executive offices were formerly located at 130 West 52nd St., New York, has removed to new quarters on 51st St., which is directly in the rear of their former location.

MARKETS

Manufactured Rubber Goods

NEW YORK, JUNE 4, 1921.

Assuming that the tire business normally represents 77 per cent of the rubber manufacturing industry of this country, its expansion this year rests entirely on progress in the automotive trade. Automobile manufacturing has undoubtedly been increasing this Spring, and by the time Summer rolls by will have made a very creditable showing after the severe depression of 1920.

All is not well with tires, however. There has been a tendency to exaggerate the optimistic reports which have been emanating from Akron during the last two months. According to keen observers of affairs in the industry it is doubtful whether manufacturers will be able to hit up to a pace that is more than 50 per cent of their production schedule last year. Much progress has been made in the manufacture of tires. But all depends on successful merchandising this Summer and Fall, and it is in merchandising methods that the tire fraternity has been notably backward.

That the public is willing to buy when the impulse moves it, or when the merchandising methods employed are such as to take advantage of all favorable conditions is shown by the high favor which certain rubber specialities such as toy balloons and bathing caps are enjoying right now.

AUTOMOBILE TIRES

It is as yet too early to judge the effect of the cuts in tire prices which took place during May. The public has scarcely digested them, and to a certain extent has not taken them seriously because the "gyp" dealers have been selling tires for many months at low levels.

At any rate the reduction has not resulted in more buying, and the public does not seem to be convinced that prices are low enough. The dealer is buying from hand to mouth, a dozen or so tires at a time, and by doing so is increasing the delivery cost, to the manufacturer.

An executive of one of the large Akron tire companies, who visited New York during Memorial Day week-end, discussed the situation with the representative of THE RUBBER AGE. The feeling in Akron, was rather, that tire production would decline further during the summer, he said. The distributing end of the tire business had been so clogged up during the Winter and Spring months that there was no incentive to speed up production at prevailing low prices. Most of the large tire companies are still tied up with contracts for raw materials at peak prices which will run through most of 1921 and it will be a long time before lower production costs will be achieved. At this rate a shortage of good tires is anticipated by the end of the Summer.

The process of re-financing is entailing much hardship for some companies. Most of the tire makers are coming through in good shape, but there are many formidable obstacles yet to be overcome before they are out of the woods and they must be faced squarely.

MECHANICAL RUBBER GOODS

The mechanical rubber trade has failed to accumulate the volume of business normally transacted around this time of the year. There have been many obstacles; the stoppage of mining operations, owing to the drastic declines in market values; labor difficulties in the paper manufacturing industry; and finally the more or less complete cessation of buying by railroads of brake-hose and belting.

Pressing need for building materials has kept the stone and cement trade going at full blast this Spring, and a good demand for belting and packing has been noted from this source.

Garden hose has of course, been the bright spot this season. Manufacturers have been pushing this line, but there has been keen competition furnished by mechanical goods concerns who usually get into the hose manufacturing business when other mechanicals are dull.

The demand for fire hose has been picking up, but conditions are still unsettled. As an instance of the shakiness of the market, a recent bid of the New York City Fire Department for extensive supplies of double-jacket hose was quoted for as high $1.50 per foot and as low as 59 cents per foot. Many quotations were absolutely below cost, according to some of the "old-line" concerns, and the keen competition for the business has tended to keep things somewhat depressed.

In the meantime, the demand for brake-hose on the part of the railroads has undergone an almost complete stoppage. The railroad repair shops have been shut down for more than four months in many cases, and the various lines have been operating on their reserve stocks of equipment.

The absence of railroad buying has been a serious handicap to the resumption of normal activity in mechanicals. Manufacturers who usually sell a large part of their production to the roads have found this factor entirely out of the market for supplies. Railroad operatives assert that with the falling off in the number of car loadings their need for equipment has dwindled proportionately. Close students of the situation, however, attribute the restricted buying to the pending labor adjustments. When these become effective the roads will re-open their repair shops, and increase their operations gradually. There will be more need for belting and for air-brake hose. But the present situation remains, one of artificially restricted demand and abundant supply.

The depression still ruling in the automotive industry has resulted in a decreased demand for hard rubber automobile accessories. A large part of the storage battery casing business has dropped away, and is not likely to return until there is a considerable recovery in automobile manufacturing.

RUBBER FOOTWEAR

Although the actual selling season for heavy rubber footwear has been over for some time, manufacturers have pushed an aggressive sales campaign for canvas rubber shoes and athletic footwear. In contrast with the slack demand for storm shoes during the mild winter months, the favorable weather has precipitated consuming interest in white rubber shoes somewhat earlier than usual.

The fact that producers have been marketing shoes at considerably lower prices this season has aided in moving stocks at a better rate. Dealers who had been cautious in placing their orders have been finding it necessary to come into the market for supplies repeatedly as their stocks ran out, and there has been a better feeling all around.

Rubber heels have been very quiet, with dealers buying in hand-to-mouth fashion. In other directions trade has been even duller. Jobbers and retailers are still loaded up with winter shoes, and heavy rubber boots. The restricted orders which they have already placed for future delivery will probably carry them through the fall business. Here and there indications of a decided improvement in this line for the Fall and Winter season of 1921 have been noted. The eastern section has been very quiet all year. Dealers who had expected the manufacturers to cut their prices again have held off stubbornly. The last cut in the price of rubber shoes was made on the 1st of the, this year. Manufacturers assert that there will be no reduction in their quotations.

DRUGGISTS SUNDRIES

It is admitted that business in druggists' sundries has not been particularly

nourishing recently. Jobbers have shown no interest in future deliveries and spot buying has been restricted to covering current wants.

Stocks, however, are being gradually worked down, according to several of the large manufacturers. There has been a somewhat better interest evinced in Fall shipments of fountain syringes. Hot water bottles have been very dull, as the market has been glutted with supplies of this article.

For some items, such as bathing caps, belts, and other rubber bathing accessories there has been a good seasonal demand, which is expected to prevail through the summer months. For hard rubber specialties there has been a steady routine demand.

Conditions, in the main, have been practically unchanged since our last report, save that there is a better feeling in manufacturing circles and the outlook for a fair business in the Fall is somewhat more promising judging from scattered inquiries, which have been coming in and out-of-town buying.

MISCELLANEOUS

With the advent of warm weather the usual seasonal demand for rubber balls, toys and novelties has arisen. There has been an especially active business in toy balloons, in fact more active than was anticipated. Dealers have been inquiring frequently for immediate deliveries and for some weeks manufacturers of these articles will be engaged supplying the spot demand.

Other seasonal articles are also enjoying a prosperous moment, golf balls and other equipments standing out especially at this time. The popularity of golf this year may result in a greater consumption of rubber than in the case of any other sport.

Business in raincoat fabrics and rubberized cloth is at its dullest stage just now, as waterproof clothing is a dead item during the summer months. Furthermore such lines as raincoats, as one manufacture pointed out are the first to feel the pinch of depression, and have not yet begun to recover from the buying strike of last year and the early part of 1921.

There have been a few scattered inquiries recently and some good out of town buying, but manufacturers have generally not launched their plans for the Fall business as yet. Raw materials have, meanwhile, become much cheaper and the drop in the cost of production will enable producers to market their commodity at prices that will permit of a rapid recovery.

One interesting development has been the attempt of rubberized fabric producers to standardize their product, according to certain practical specifications, which are to be adopted by the whole trade in this country. Experiments are being made now and it is only a matter of weeks before the results will be made known.

Cottons, Yarns and Fabrics

NEW YORK, JUNE 3, 1921

The raw cotton market has continued to hold steadily to practically the same levels it has occupied for the past two months. At the present writing, July options are quoted at 12.80 cents per pound, while our last report, two weeks ago, quoted 13.05, showing a decline of something less than ¼ of a cent, and a slight decline from the levels held a month ago.

The tone of the market has been steady, and its failure to make any real gains has been due to the chaotic political situation in Europe and the strike in England, both of which have largely kept Europe out of the market.

There have been, on the whole, better cable advices from Liverpool and more optimism as to the coal strike and with the improving international political situation, a decided betterment in the business outlook is expected.

Some interest has been aroused by the active buying, recently, of January cotton at 14.20 in the early trading of June. When the demand is filled, however, quotations on the particular options being bought take a sharp drop. The large quantities of cotton hanging over the market prevent bulges from developing into permanent gains.

At the last moment the market has made a moderate advance, owing to a bearish Government crop report and poor conditions in the cotton belt. Spot cotton sold up to 12.95, September to 13.23, and October to 13.57, an average gain of 10 points over the previous day.

Price Fluctuations

ADVANCED

Sheetings, 40-inch 2.85-yard, ¼ cent per yd.
Sheetings, 40-inch 3.15-yard, ¼ cent per yd.
Burlaps, 10½-ounce 40-inch, 15 cents per cwt.

DECLINED

Burlaps, 7-ounce 40-inch, 20 cents per cwt.
10-ounce 40 inch, 5 cents per cwt.
Drills, 37-inch 3.00-yard, ¼ cent per yard.
37-inch 3.95-yard, ¼ cent per yard.
Ducks, Hose, 3 cents per lb.
Shoe, 3 cents per lb.
Enameling, 1 cent per lb.
Single filling, 1 cent per lb.
Osnaburgs, 30-inch 7-ounce, ¼ cent per yd.
Sheetings, 40-inch, 3.60-yard, ½ cent per yd.
Sheetings, 40-inch, 3.75-yard, ½ cent per yd.
Sheetings, 40-inch, 4.25-yard, ¼ cent per yd.
Tire Fabrics, 17¼-ounce Egyptian, combed, 5 cents per sq. yd.
Tire Fabrics, 17½-ounce Egyptian, carded, 5 cents per sq. yd.
Tire Fabrics, 17¼-ounce Peelers, carded, 1 cent per sq. yd.

Recent statistics on the cotton acreage indicate that present prospects are for a cut of approximately 27.9 per cent, which may result in the smallest crop in twenty years, possibly under 10,000,000 bales. There are indeed constructive possibilities in sight which may ultimately help the cotton market to work higher.

PREMIUM STAPLE COTTON

The demand for extra staple cotton has continued rather inactive and spasmodic, and has been just sufficient to keep interest alive, especially in some of the long staple specialities. Prices as a rule have changed very little from previous levels but there are a number of odd lots offered at considerably below the general market levels, some of which are of sufficient size to exert an unsettling effect upon the market. Despite this fact some shippers have boosted their prices a quarter or a half cent on short cottons and a cent or more on staples, while others have withdrawn offerings in New England on the ground that much better prices were obtainable at Southern points.

The extra staple demand has been confined chiefly to the high grades in the longer lengths with several quarters interested in full inch and a quarter cotton strict middling, and some sales of this variety were reported. Prices in actual sales of 1¼ inch staple were 24 cents as a rule though many were asking 25 cents per pound and up.

Extra staple prices vary so widely that it is difficult to quote a definite market on them, but taking as a basis strict middling white cotton, a fair average market based on current quotations and sales can be considered as follows: 1⅛ inch, 18 to 20 cents; 1 3/16 inch, 21 to 23 cents; 1¼ inch, 21 to 25 cents; 1 5/16 inch, 26 to 28 cents.

More interest has been manifested in Sea Islands at spinning centers in New England, although the demand is confined to a few factors. Average extra choice is understood to have been sold in New England at 40 cents per pound, and some inquiries at better than that level have been reported.

EGYPTIAN COTTON

Since the last break in the Alexandria market fully good fair Sakels has undergone steady fractional declines which has brought it down to a basis of 26½ cents per pound landed in Boston. This quotation which ruled during the first week of June was 2½ cents lower than that given in our last report and shows a decline of 3½ cents over the past month.

The Egyptian market has been an extremely dull affair. Some factors said that they had never seen it duller. Fully good fair Uppers ruled at 17½ cents per pound, c.i.f. Boston. The demand for extra staple cotton has been decidedly inactive, and there have been a number of offerings obtainable at figures materially below the general market level. From New England come reports of sales of medium grade Sak around 26 cents with approximately 300 bales still offered at that figure. One or two lots slightly lower in grade can be bought for 24 or 25 cents. Slightly better grades have been held for 30 cents, but mills are unwilling to pay that much for it.

Alexandria has been quoting 26 cents for shipment from Egypt of medium grades with the buyer paying the tariff

if it should go into effect before arrival. Uppers have been very quiet there being practically no spot material offered and no demand reported for them. It is not generally believed that the tariff will affect uppers.

The heavy declines in the Egyptian cotton market are ascribed to the absence of any American buying interest which the Emergency Tariff has practically killed off. The strike in England at the same time has simply closed up another possible outlet.

The Liverpool market on June 1 quoted 14¼ d., equivalent to 23 cents. The stocks of Egyptian long staple cotton in store in the United States at the end of April were estimated at 107,000 Egyptian bales (720 lb).

The new crop in Egypt is expected to be a small one. Recent estimates have placed it around 4,000,000 bales. The yield per acre has been falling every year, and this together with the curtailment movement in force will probably result in one of the smallest outputs in many years. There have been no bad weather reports as yet this season but the carry-over is considered as being unusually large.

ARIZONA EGYPTIAN COTTON

Most cotton houses report a dull market for Arizona Egyptians but from some New England spinning centers come reports of growing interest in Pima cotton with sales noted in Providence and Boston during the first week of June. Shippers in the Southwest were asking 35 cents gross weights for No. 2 grades but sales have been made in New England at 32 cents for No. 2 and 34 cents for No. 1 grades. The mills so far have been unwilling to pay the 34 and 35 cents asked by most cotton firms for No. 2 grades and have insisted on seeing the actual samples before considering a purchase. Certain Eastern firms are said to be buying the No. 1 grades in Arizona around 33 cents out there, which would mean better than 35 cents landed at Eastern points without any profit added.

The absence of Egyptian competition in the near future has given the market a somewhat stronger undertone, although price ideas have differed widely and have been influenced to some extent by the opinions of the seller as to the prospects for the balance of the season.

TIRE FABRICS

The market in tire fabrics has been a featureless affair during the past fortnight, the holiday in the last week reducing the volume of transactions to very small margins. There have not been many actual sales to tire manufacturers and most of the demand has been confined to the carded Egyptian peelers.

Prices, however, have shown a steadier undertone with the exception of the 17¼ ounce Egyptian combed and the Egyptian carded which lost about 5 cents per sq. yd. in recent trading. Other grades especially the peelers were comparatively firm.

Some factors reported an active demand for tire yarns with inquiries for both carded and combed peelers and carded as well as combed yarns made from Sak, Sea Islands, American Egyptians and similar long stapled specialities. Some buyers want yarn made from Egyptian uppers also, but there have been very few tire yarn orders actually placed despite the large number of inquiries. Price ideas on tire yarn have been very far apart, in many cases the distance between the buyer's and the spinner's being so great as to put business out of the question.

Another difficulty encountered and one that may be partly responsible for the wide divergence of price ideas is the uncertainty as to how the tariff will be applied to Egyptian cotton. Spinners are trying to play safe if they do not happen to have on hand the cotton required, for the volume of spot material available is said to be very limited.

HOSE AND BELTING FABRICS

There has been a little business in single filling ducks recently but other varieties were very dull and yielded generally to pressure for lower prices. The lack of support by the rubber trade has been a factor in keeping this market on the down grade. Even the single fillings by tent-lawn makers with rubber people practically out of the market as yet.

Double filling was firm at 13 to 14 cents per yard. Hose ducks dropped 3 cents to a basis of 25 to 26 cents per pound, while belting ducks ruled nominal and unchanged in the absence of any actual business. Enameling ducks were down 1 cent per pound. Quotations showed a wide range according to quality.

There has been a steady liquidating movement for many months now but it is the opinion of the trade that not enough liquidation has been done and while it is possible that a precipitated demand from the rubber trade might harden prices it is equally possible that the volume of offerings likely to result might drive buyers out of the market again.

DRILLS, SHEETINGS, AND OSNABURGS

A lull in the past week has left the market for sheeting rather quiet after some good buying in preceding weeks. The holidays also served to limit the amount of business transacted. There has been an active interest displayed in the print-cloth sizes but the 40-inch grades have been very heavy.

Grey goods were generally firmer as to price and there were rumors of big buyers being in the market to cover their nearby requirements.

The market for drills also suffered a relapse after seeing some good buying support for two or three weeks during May. The first week of the current month saw very little business in drills, most of the important consumers seeming to have covered their needs for the time being.

Stronger cable advices from Calcutta in the last few days gave a stronger tone to the domestic burlap market which had been losing ground steadily. The spot market was firmer on light-weights although most of the grades below 10 ounces averaged 20 points lower to the pound than in our last report. Importers stated that there had been a better consuming demand recently and that even tire people were sending in delivery orders against stocks held in store for them on contract.

TIRE FABRICS

17¼-ounce Sea Island, combed, sq. yd.			Nominal
17¼-ounce Egyptian, combed	.70	@	.75
17¼-ounce Egyptian, carded	.60	@	.65
17¼-ounce Peelers, carded	.49	@	.55
17¼-ounce Peelers, combed	.67	@	—

DUCKS

Belting (pound basis) ..... lb.	.25	@	—
Hose (pound basis) ..... lb.	.25	@	.26
*Enameling ..... lb.	.27	@	.30
Shoe Ducks ..... lb.	.32	@	—
Single filling ..... yd.	.10½	@	.13
Double filling ..... yd.	.13	@	.14

*Price varies according to width.

DRILLS

37-inch	3.25-yard ..... yd.	.06¾	@	—
37-inch	2.75-yard ..... yd.	.08¼	@	—
37-inch	3.00-yard ..... yd.	.07½	@	—
37-inch	3.50-yard ..... yd.	.06½	@	—
37-inch	3.95-yard ..... yd.	.06⅛	@	.06¼

OSNABURGS

30-inch	7-ounce	.06½	@	—
40-inch	7-ounce	.07½	@	.08

SHEETINGS

40-inch	2.35-yard ..... yd.	.10	@	—
40-inch	2.50-yard ..... yd.	.09½	@	—
40-inch	2.85-yard ..... yd.	.08¼	@	—
40-inch	3.15-yard ..... yd.	.09¼	@	.09½
40-inch	3.60-yard ..... yd.	.07¾	@	.08
40-inch	3.75-yard ..... yd.	.06½	@	.06⅜
40-inch	4.25-yard ..... yd.	.05½	@	.06

Note—In view of the unsettled conditions prevailing in the market at the present time, the prices quoted above are more or less nominal, and are not guaranteed.

BURLAPS
(Carload Lots)

7 -ounce	40-inch ..... lb.	3.40	@	——
7½-ounce	40-inch	3.40	@	——
7½-ounce	45-inch	4.25	@	——
8 -ounce	40-inch	3.50	@	——
8½-ounce	40-inch	3.75	@	——
10 -ounce	36-inch	4.00	@	——
10 -ounce	40-inch	4.10	@	——
10 -ounce	45-inch	5.00	@	——
10½-ounce	40-inch	4.15	@	——

Chemicals and Compounding Materials

NEW YORK, JUNE 6, 1921

The markets in the past two weeks have reflected a perceptible let-down on the part of the rubber industry in the demand for chemicals and compounding materials. Consumers after displaying a fair amount of buying interest during the month of May seem to be proceeding more conservatively just now, nearby requirements having been covered.

Prices, which had firmed up recently, and in some cases made gains, were generally steady, and in very few cases were there considerable declines. In some instances, the rubber trade has been giving good buying support to such commodities as benzol and carbon tetrachloride, and during the two weeks supplies turned scarce on the spot and sellers were able to fill orders at higher prices.

The heavy chemicals and fillers have slumped somewhat. The markets for clays and talcs have been in an overloaded condition. Barytes has been an excep-

tion and has suddenly taken a turn for the better, owing to the good business in lithopone. There have been fair tonnages of zinc oxide shipped into consuming channels, but this like the other lines has shown a tendency to slacken somewhat during the first week of June.

The markets as a whole have been firmer, fewer declines have been noted than has been the case in many weeks and the volume of business has held up fairly well in the main.

IMPORTS AND EXPORTS

Disturbed industrial conditions in Great Britain have shortened the supply of the red oxides, and prices have been very firm with but few incoming shipments. Heavy importations of China clay from England, were noted, and considerable quantities of iron oxide also arrived at this port late in May. About 80 barrels of calcined magnesite, and 50 barrels of zinc oxide, mostly French and German were noted. One of the largest incoming shipments of lithopone, 126 casks, arrived from Belgium about two weeks ago.

BARIUM PRODUCTS

There has been a better demand for crude barytes, as a result of the continued rush on lithopone. From the West come reports of large tonnages sold and the necessity for withdrawals of Eastern holdings. The proposed tariff on foreign barytes has also served to strengthen the position of the domestic product. Blanc fixe has also had a better turn. Demand has worked up rather suddenly, as it usually does in this market, and although the market still rules at 4 to 4¼ cents for dry blanc fixe, the surplus has been absorbed to a large extent, owing to the fact that most plants have been shut down for most of the present year. Barytes, prime white, domestic was quoted, unchanged at $24.50 to $26.50 per ton, f.o.b. mines, packages extra.

DRY COLORS

Business in dry colors has lightened somewhat in the past fortnight, and some items weakened as to price. The iron blues, Prussian, Milori, and Celestial, dropped off 5 cents per pound, after protracted dullness at the 60 cent level, so that the market now rules at 55 to 60 cents.

Demand from the rubber industry seemed to ease off during the first week of June. Sellers of carbon gas black reported a somewhat smaller volume of orders, recently, was giving them a chance to catch up, after the rush of last month. The price of carbon gas black was unchanged at 10½ cents as the inside quotation, in car lots. Drop-black and ivory black underwent fractional declines, with buying generally very quiet.

Importers of oxide reds also reported a slight falling off in both inquiries and orders from the rubber people who seem to be proceeding more slowly just now. Indian red was firm at 13½ cents, with a fair amount of inquiries coming in. The position of this item as well as the pure copperas reds has been strengthened by the coal strike in England which has rendered the shipping of oxide reds and iron oxide very uncertain. Supplies are quite scarce, just now, and are likely to be so until the industrial crisis in the United Kingdom is over, while prices are harder.

Antimony sulphurets reflect a little better feeling, for the most part. All but the golden have been steady in price, the latter, however, having fallen off 2 cents per pound, since our last report to a level of 23 to 24 cents. Tuscan red was firm at 17½ cents per pound, receiving good buying support from industries other than rubber.

Price Fluctuations

ADVANCED

Acetanilid, 2 cents per lb.
Benzol, 90 per cent, 3 cents per lb.
Caustic soda, 25 cents per cwt.
Carbon tetrachlordide, ½ cent per lb.
Cresylic acid, 5 cents per gallon.
Castor Oil, No. 3, 1¾ cents per lb.
Corn oil, crude, 50 cents per cwt.
Linseed oil, raw, 4 cents per gal.
Phenol, ½ cent per lb.
Shellac, T. N., 2 cents per lb.

DECLINED

Acid, sulphuric, 66 degrees, $1 per ton.
Alcohol, ethyl, 190 proof, 5 cents per gallon
Antimony sulphuret, golden, 2 cents per lb.
Blacks, drop, ½ cent per lb.
ivory, 1 cent per lb.
lampblack, 2 cents per lb.
Blues, Prussian, 5 cents per lb.
Ultramarine, 2 cents per lb.
Casein, c.p., 2 cents per lb.
Formaldehyde, ½ cent per lb.
Hexamethylene-tetramine, 2 cents per lb.
Lime flour, ½ cent per lb.
Oils, chinawood, ½ cent per lb.
Palm, Niger, ½ cent per lb.
Lagos, ½ cent per lb.
Glycerine, ½ cent per lb.
Talc, Italian, $f per ton.
Turpentine, spirits, 4 cents per gal.
Wax, Ceresin, white, ½ cent per lb.
Petrolatum, amber, ½ cent per lb.

The chrome yellows have been unchanged at 21 cents per pound, but their position has been somewhat weaker on account of the impending break in the price of iron blues, and it is believed that 20 cents per pound may conceivably be the market for chrome yellows within the near future.

LEAD PIGMENTS

There has been no noteworthy development in the lead pigments market. Producers stated that sales of litharge had been picking up steadily all month and it is thought that the cut of ½ cent per pound, some weeks ago, may have assisted in this. Sublimed white lead has been very dull, and very little actual business has been transacted recently. As a rule, tire manufacturers still have ample supplies of sublimed blue lead, litharge, and white lead on hand, but liquidation has about run its course, and the market is sounder than it has been in a long time. The large producers have been quoting white lead, basic carbonate at 8 cents, with some smaller factors underselling them at 7½ cents per pound. In none of the lead pigments has any tendency toward lower levels been noted during the period under review.

LITHOPONE

The demand for lithopone continues good, and leading factors have all the business they can handle. However, there is sentiment against any advance in the price, in spite of the good demand. Lithopone makers are much troubled over the prospects of a tariff on foreign barytes, which would shut off that source of supply. The market promises to continue active and the undertone is firm. The price remains unchanged at 7 cents in bags and 7¼ cents in barrels, for car lot shipments.

TALCS AND CLAYS

There is enough imported talc coming in right along to fully supply the demand. Several large lots of French talc have arrived at this port within the past fortnight. Prices are holding up quite well, save in the case of the high grade Italian talc which has gravitated toward lower price levels. A month or so ago importers of Italian talc were quoting from $57 to $63 per ton; now the market rules around $53 to $55 per ton, with some stuff offered at as low as $45. Quotations on medium grades run from $22.50 to $30 per ton, with domestic talc at $18 to $20.

The market for china clay has been extremely dull. Some 1626 tons of English china clay arrived recently, and this grade is quoted at $16 to $24 per ton; the domestic, lump, china clay, has weakened further, owing to the overloaded condition of the market and prices rule at $7.50 to $9, a ton, f.o.b. point of production.

WHITING

Producers of English chalk whiting state that there is very little business with the rubber trade, except for some with rubber specialty manufacturers, and with the paint trade. Demand has been fair, along routine lines, and there have been no new price-developments. Commercial whiting is quoted at $1.15 to $1.20, while English cliffstone rules at $1.75 to $2, per 100 pounds.

ZINC OXIDE

During May the manufacturers of zinc oxide were hard put to it to keep up with the current demand and orders ran somewhat ahead of deliveries, according to their statements. At any rate, the surplus has been worked down considerably, and the market is not as heavy as it was earlier in the spring. Recently rubber tire makers have not been ordering as briskly, and the call for zinc oxide has eased off appreciably, probably reflecting lessened activities for the time being in the tire trade. Prices have been firm and unchanged. Some imported zinc oxide, of the white seal grade, coming from France has been offered in the domestic market at 12½ cents per pound. There has been no surplus of the French process qualities, and the importers expect to have no difficulties in disposing of their holdings. Some German red seal zinc oxide has also been offered at 8¾ cents per pound. Both of these quotations are for less than car load lots. A French green seal zinc oxide has been quoted similarly at 10¾ cents per pound.

CRUDES

The market for benzol has tightened somewhat, owing to pressure for spot supplies, and prices have been quite strong, recently. The demand for the 90 per cent grade has been brisk, and quotations have advanced, from 2 to 3 cents

per pound, to 31 cents in drums, and as high as 35 cents for the pure benzol. Phenol was generally offered at from 9½ cents to 12 cents. The Government surplus has been offered by agents at 12 cents, and the market has been slack. Xylol has been stronger in sympathy with benzol, and has shown a tendency to advance, although prices are as yet unchanged.

A better tone was also noted in the market for toluol, and supplies were said to be none too plentiful. Napthalene has been moving sluggishly, and there has been much disappointment over the poor business registered so far this season. The flakes were quoted down to 7½ to 9 cents.

INDUSTRIALS

Small spot orders for cadmium sulphide have been just sufficient to maintain interest in this item. One encouraging sign was the improved demand from the rubber trade. Quotations in 100 pound lots ruled at $1.20 to $1.30. Carbon bisulphide has been extremely dull with a very limited call from the rubber trade, and no movement in prices. For carbon tetrachloride, the market has continued to firm up, with prices 1 cent to ½ cent higher than in our last report. An excellent inquiry has developed from the rubber trade.

Caustic soda has occupied a firmer position on the spot, the market having advanced about 15 cents per 100 pounds during the fortnight to $3.90 for the 76 per cent. Buyers have also been more active in the market for soda ash, and with the resale market practically liquidated, very little could be secured under $1.90, and some sellers were quoting considerably above $2 per 100 pounds.

INTERMEDIATES

The market was generally easier, and the improvement noted recently seems to have relapsed to very quiet trading conditions. For aniline oil, consumers requirements seem to have been satisfied for the time being, as there were only small orders in the market and these infrequently. Quotations ruled at 20 cents, up, but material could be procured on firm bids at 19 cents. There were further appearances of cheap offers of material from Japan, to arrive, at around 18 cents.

ACCELERATORS

Organic

Aldehyde, ammonia, crystals	lb.	$1.05 @	1.15
Aniline oil, bulk basis	lb.	.20 @	.22
Excellerex	lb.	.65 @	.75
Formaldehyde-aniline	lb.	.60 @	.65
Hexamethylene-tetramine (powdered)	lb.	.90 @	.92
Paraphenylene-diamine	lb.	1.75 @	2.00
Thiocarbanilid	lb.	.50 @	.65
Vulcocene	lb.	.35 @	..

ACCELERATORS

Inorganic

Lead, dry red, bbls	lb.	.08¾ @	.09¼
sublimed blue	lb.	.07¼ @	.07½
sublimed white	lb.	.07¼ @	.07½
white basic carbonate	lb.	.07½ @	.08
Litharge, commercial, bbls.	lb.	.08½ @	.08½
Lime flour	lb.	.01½ @	.02½
Magnesia, calcined, light	lb.	.25 @	.30
calcined, heavy	lb.	.06 @	.06½
Magnesite, powdered	ton	50.00 @	65.00

COLORS

Blacks

Bone, powdered	lb.	.06½ @	.08½
Carbon gas	lb.	.09 @	.20
Drop	lb.	.07½ @	.16
Ivory	lb.	.10½ @	.45
Lampblack	lb.	.15 @	.45
Oxide of iron	lb.	.04½ @	—

Blues

Prussian	lb.	.55 @	.60
Ultramarine	lb.	.10 @	.35
Cobalt	lb.	.25 @	.30
Rubber maker's blue	lb.	3.50 @	..

Browns

Iron oxide	lb.	.04 @	.08
Sienna, Italian, raw burnt	lb.	.06 @	.15
Umber, Turkey, raw and burnt	lb.	.05 @	.06½

Greens

Chrome, light, c. p.	lb.	.36 @	.40
medium	lb.	.40 @	.52
dark	lb.	.52 @	.58
oxide	lb.	.60 @	.70

Reds

Antimony, crimson sulfuret	lb.	.40 @	.46
red	lb.	.25 @	.28
golden	lb.	.25 @	.30
Indian, pure	lb.	.13½ @	.16
oxide, copperas, pure	lb.	.13½ @	.15½
reduced	lb.	.11½ @	.12½
Para toner	100 lb.	1.50 @	1.70
Toluidine toner	lb.	3.25 @	3.50
Tuscan	lb.	.17½ @	.30
Venetian	lb.	.02½ @	.03½
Vermillion, English, quicksilver	lb.	.90 @	.95
domestic	lb.	.25 @	.30

Yellows

Chrome, light, c. p.	lb.	.21 @	..
dark	lb.	.21 @	..
medium	lb.	.21 @	..
Ocher, French	lb.	.03¼ @	.04
domestic strong	lb.	.03 @	.05
Zinc chromate	lb.	.40 @	.50

COMPOUNDING INGREDIENTS

Aluminum flake, bags	ton	27.00 @	..
bbls.	ton	33.00 @	..
Aluminum silicate	ton	17.00 @	24.00
Ammonium carbonate, powdered	lb.	.07½ @	.10
Barium dust	lb.	.05 @	..
Barytes, Southern off-color, f.o.b. mills	ton	16.50 @	18.00
Western, prime white, f.o.b. mills	ton	24.50 @	26.50
Beta-naphtol, technical	lb.	.38 @	.42
Blanc fixe, dry, f.o.b. works	lb.	.04 @	.04¼
Cadmium sulphide	lb.	1.20 @	1.30
Casein, c. p.	lb.	.40 @	.42
Chalk, precipitated, extra light	lb.	.02¾ @	.03¼
heavy	lb.	.02¼ @	.02½
Clay, China, domestic, lump	ton	7.50 @	9.00
imported	ton	16.00 @	24.00
Dixie	ton	22.00 @	35.00
Blue Ridge	ton	22.00 @	35.00
Formaldehyde	lb.	.14 @	.15
Fuller's Earth, powdered	ton	22.00 @	..
Fossil flour	ton	60.00 @	..
Genasco, mineral rubber	ton	50.00 @	52.00
Gilsonite	ton	60.00 @	65.00
Glues, extra white	lb.	.30 @	.40
medium white	lb.	.25 @	.30
cabinet	lb.	.20 @	.35
cabinet low grade	lb.	.17 @	.19
common bone	lb.	.13 @	.19
Graphite flake, bbls.	lb.	.14 @	.20
powdered	ib.	.04 @	.10
Ground glass, fine	lb.	.03½ @	.04
Hydrocarbon, hard	ton	35.00 @	45.00
soft	ton	35.00 @	40.00
Infusorial earth, powdered	lb.	.02 @	.03½
bolted	lb.	.03½ @	..
Liquid rubber	lb.	.16 @	..
Lithopone, bags, car lots	lb.	.07 @	..
bbls.	lb.	.07¼ @	..
M.R.X., mineral rubber	ton	80.00 @	90.00
Napthalene flakes	lb.	.07¼ @	.08
Orange Mineral	lb.	.11¾ @	.13½
Plaster of Paris	bbl.	4.25 @	5.00
Rotten Stone	lb.	.02½ @	.04½
Rubber Substitute, black	lb.	.08 @	.15
white	lb.	.10 @	.17
brown	lb.	.12 @	.16
Silica (silex)	ton	12.00 @	35.00
Soapstone, powdered	ton	12.00 @	15.00
Starch, powdered corn	cwt.	2.18 @	2.56
French	ton	22.50 @	30.00
Sulphur, flour, commercial	cwt.	1.45 @	2.10
superfine	cwt.	2.00 @	2.90
Sulphur, chloride, drums, (see also Colors, Antimony)	lb.	.06 @	.07
Talc, domestic	ton	18.00 @	20.00
French	ton	22.50 @	30.00
French, high grade	ton	40.00 @	42.50
Italian	ton	50.00 @	57.00
Terra Alba, American No. 1	cwt.	1.85 @	2.00
American No. 2	cwt.	1.25 @	..
Tripoli	lb	.02½ @	..
Whiting, domestic	cwt.	.75 @	.80
Quaker	ton	13.00 @	15.00
English chalk, commercial	cwt.	1.15 @	1.20
glider's bolted	cwt.	1.20 @	1.30
Paris white	cwt.	1.40 @	1.50
English cliffstone	cwt.	1.65 @	1.75

Vorite, Rubber Substitute

"Soft"	lb.	.14 @	..
"A"	lb.	.14½ @	..
"C"	lb.	.14½ @	..
"Special"	lb.	.14½ @	..

Zinc Oxide—

French process, red seal	lb.	.10 @	.10½
white seal	lb.	.12¼ @	.12½
green seal	lb.	.11 @	.11½

Leaded grades, American process—

Commercially lead free	lb.	.08¾ @	.09¾
5 per cent lead sulphate	lb.	.08 @	.08½
10 per cent lead sulphate	lb.	.07⅞ @	.08⅜
20 per cent lead sulphate	lb.	.07¾ @	.08¼
35 per cent lead sulphate	lb.	.07⅝ @	.08⅛
Zinc sulphate	lb.	.03¼ @	.03½

SOFTENERS

Acids

Acetic, 28 per cent	cwt.	2.50 @	2.75
Carbolic (phenol)	lb.	.09½ @	.16
Cresylic, 97 to 99 p. c. pale	gal.	.70 @	.75
Muriatic, 20 degrees	cwt.	1.20 @	1.50
Nitric, 36 degrees	cwt.	5.50 @	6.00
Sulphuric, 66 degrees	ton	18.00 @	20.00
60 degrees, bulk	ton	11.00 @	12.00
Tartaric, crystals	lb.	.33 @	.39

Alkalies

Caustic soda, 76 p.c.	cwt.	4.00 @	4.10
Soda ash, 58 p. c.	cwt.	1.90 @	2.10

Oils

Castor, No. 3 bbls.	lb.	.09½ @	.10½
Corn, crude, bbls.	cwt.	7.76 @	..
refined	cwt.	9.26 @	..
Chinawood, bbls	lb.	.13½ @	.14½
Cottonseed, crude	lb.	.05¾ @	—
prime summer yellow	lb.	.07⅞ @	—
Glycerine, c. p. drums	lb.	.16½ @	.17
Linseed, carload spot	gal.	.75 @	..
bbls.	gal.	.78 @	..
Palm, Niger	gal.	.05½ @	—
Lagos	lb.	.06¾ @	.07¼
Peanut, domestic crude	lb.	.05¾ @	.07
Pine, steam distilled, over .933 sp. gr.	gal.	1.30 @	1.35
Rapeseed, refined	gal.	.90 @	..
blown	gal.	.85 @	..
Rosin, first rectified	gal.	.36 @	..
second rectified	gal.	.38 @	..
Tar, commercial	gal.	.35 @	.37
Soya Bean, crude, bbls.	lb.	.07¾ @	.08

Resins and Pitches

Cantella gum	lb.	.50 @	..
Cumar resin	lb.	.09 @	.13
Tar, retort	bbl.	12.00 @	..
kiln burnt	bbl.	12.00 @	..
Pitch, Burgundy	lb.	.05 @	.06
coal tar	ton	22.00 @	..
rosin	bbl.	6.75 @	7.00
Rosin, grade B. ex-yard	bbl.	5.00 @	..
grade K	bbl.	6.25 @	..
Shellac, T. N.	lb.	.70 @	.75
fine orange	lb.	Nominal	
bleached, ground	lb.	.68 @	.69
bone dry	lb.	.80 @	.81

Solvents

Acetone, drums, c. p.	lb.	.12½ @	.13
Acetanilid, c. p., bbls.	lb.	.23 @	.27
Alcohol, denatured, No. 1	gal.	.38 @	.40
Methyl, 95 per cent, drums	gal.	.77 @	.79
Ethyl, 190 proof, drums	gal.	4.70 @	4.80
Benzol, 90 per cent	lb.	.25 @	.31
pure	lb.	.27 @	.35
Carbon bisulphide	lb.	.06¼ @	.07½
tetrachloride	lb.	.10½ @	.12½
Dimethylaniline	lb.	.40 @	.55
Naptha, motor gasoline, steel bbls.	gal.	.26 @	..
68 to 70 degrees	gal.	.35 @	.35½
70 to 72 degrees	gal.	.36½ @	..
73 to 76 degrees	gal.	.37½ @	.38½
machine, steel bbls.	gal.	.43½ @	.47½
solvent, crude, heavy	gal.	.25 @	.27½
Phenol, (see Acids, carbolic)			
Toluol, pure, drums	gal.	.27 @	.32
Turpentine, spirits, ex-yard	gal.	.61 @	.63
wood	gal.	.63 @	—
Xyol, pure	gal.	.40 @	.43
commercial	gal.	.28 @	.35

Waxes

Beeswax white, pure	lb.	.43 @	.47
Carnauba, No. 1	lb.	.48 @	.49
Ceresin, white	lb.	.13 @	.14
Bayberry	lb.	.24 @	.26
Montan, crude	lb.	.07 @	.08
Ozokerite, hard, pure	lb.	.30 @	.33
Paraffin, pale, .885 sp. gr.	lb.	.18 @	.21
Petrolatum, amber, bbls.	lb.	.05 @	.05½
dark amber	lb.	.04½ @	..

Crude Rubber

NEW YORK, JUNE 6, 1921

Rubber sagged to the lowest point reached in its history, during the last fortnight, when ribbed smoked sheets were quoted and sold on the spot at 13½ cents. Crude rubber traders declared that the bottom seemed to have fallen out of the market, and some ventured that ribbed smoked would descend to 12 cents per pound before many days.

Taken broadly, the market ruled at 13½ to 13¾ cents. On firm bids, some business was transacted at as low as 13 cents. Values of all kinds of rubber are said to be far below cost of production, which is estimated to average from 20 to 25 cents per pound in the Far East.

Demand for supplies of crude rubber has fallen off almost to the zero point again and there is no business in futures whatsoever. For July-September ribbed sheets 15 cents was asked, and for October-December deliveries 15¼ cents. Quotations on first latex crepe ruled at 16 to 16½ cents, with July-September deliveries quoted at 17 cents. Paras were lifeless and up-river fine dropped to a basis of 16 to 16½ cents with all other South American grades down similarly.

At the beginning of May ribbed smoked sheets were offered at 16½ cents and showed an advancing tendency. Since then the market has lost three cents per pound, a severe set-back, considering the present low price of the commodity.

In the past week or so the demand from manufacturers has petered out. Some of the smaller tire manufacturers had been actively in the market recently and the large companies had been sending in good delivery orders against their contracts. But of late the rubber manufacturing industry seems to have lapsed again.

The Spring boom which every one had been counting on hopefully has failed to materialize. At least the tire companies have decided to go ahead very conservatively and avoid a recurrence of the glutted condition which the industry saw at the close of last year.

A somewhat impressive crop of receiverships in the tire trade has also helped to undermine the rubber market. The banks who are controlling the destinies of a number of large tire manufacturers just now are determined to keep their output restricted in porportion to the actual consumer demand. Recent rumors from Akron have it that the summer months will see a drop in production instead of an increase.

The London rubber market has weakened in sympathy with the domestic market and ribbed smoked sheets were quoted down to about 8 pence. A despatch from London under date of May 26th states that the price of rubber there "is now below the lowest cost of production and plantation companies are suffering heavy losses. One expert estimates that only 25 per cent of the existing companies are solvent and that at the end of the year most of the small, expensively managed concerns will go out of business. Only the big, cheap producers, it is said, will survive."

Ceylons		
Smoked sheets, ribbed, spot	.13½ @	.13¾
July-Sept. sheets	.15 @	—
Oct.-Dec. sheets	.16¼ @	—
Smoked sheet plain, spot	.12½ @	—
First latex pale crepe	.16 @	.16½
July-Sept. latex	.17 @	—
Oct.-Dec. latex	.18 @	—
Amber crepe, No. 1	.13½ @	—
Amber crepe, No. 2	.12½ @	—
Amber crepe, No. 3	.11½ @	—
Clean brown crepe	.13 @	—
Light clean brown crepe	.13 @	—
Roll brown crepe	.10¼ @	—
Grand Central crepe	Nominal	
Africans		
Loando Niggers	.07 @	—
*No. 1 Benguella	.07 @	—
*No. 2 Benguella	.06½ @	—
Lapori Ball	— @	—
Paras		
Up-river fine	.16 @	.16½
Up-river medium	.14 @	—
Up-river coarse	.08 @	—
Islands fine	.17¾ @	—
Islands coarse	.07½ @	—
*Madeira fine	.21 @	—
Cameta	.08½ @	—
Centrals		
Corinto prime	.09 @	—
Esmerelda prime	.09 @	—
Miscellaneous		
Guayule wet	.15 @	.18
*Balata block Panama	.34 @	—
Balata sheets	.71 @	.73
Palembang	.06¾ @	—
Bangermassin	.06¼ @	—
Columbian Block Balata	.43 @	—
Prime Pontianac	.06¼ @	—

*Nominal

Scrap Rubber

NEW YORK, JUNE 6, 1921

The drastic declines in the wild rubber market have militated against whatever chances of recovery there might have been for rubber scrap. There has been no improvement in the situation and the market has been absolutely stagnant, save for a very limited demand for boots and shoes.

According to recent estimates the production of reclaimed rubber has dropped to about 25 per cent of normal, which is about the present rate of trade consumption. The cuts in tire prices have also served to depress the reclaimed rubber industry. Exports of scrap for the nine months ended March 1921, totalled only one-half of those for the same period of 1920. Quotations by leading shippers of scrap rubber were nominally as follows:

	Cents per Pound	
Solid Tires	.01½ @	.02
Auto Tire Peelings	.02¼ @	.02½
Truck Tires	.01 @	.01¾
Black Rubber	.01½ @	.02
Boots and Shoes	.02¼ @	—
Arctics, trimmed	.02 @	.02¼
Arctics, untrimmed	— @	—
Tire—Automobile	½ @	¾
Bicycles, pneumatic	½ @	¾
Mixed Hose	½ @	¾
Air Brake	.01 @	—
Inner Tubes, No. 1	.04¼ @	.04¾
Inner Tubes, No. 1	.03¼ @	.03½
Red Tubes	.02¼ @	.03½

Akron Stock Prices

(Special Akron Correspondence)

Quotations of Akron rubber stocks on the Akron exchange have slumped during the past month owing to unfavorable trade reports.

Firestone common is selling down to 65 and Miller is quoted at 62 asked. There are few sales at these figures, however, as holders are loath to leave go of stock at figures so far below last year's prices.

Goodrich common has slumped at 35 and Mason to 15 and so on down the list. Preferred issues have dropped with common.

Goodyear is showing much weakness since the reorganization. Common has dropped below 8 and preferred under 25.

Following are the quotations:

	Bid	Asked
Amer. R. & T. com	..	40
do pfd.	..	80
Amazon Rubber	..	40
Firestone T. & R. com	65	70
do 6 pct. pfd.	80	86
do 7 pct. pfd.	70	74
General T. & R. com	200	225
General 7 pct. pfd.	75	85
B. F. Goodrich com	35	36
do 7 pct. pfd.	78	80
do 5 yr. 7 pct. notes	90	91
Goodyear T. & R. com	7½	8
do 7 pct. pfd.	24	24½
Goodyear 8's	..	100
India Rubber com	..	100
do 8 pct. pfd.	..	70
Mason T. & R. com	15	16
do 7 pct. pfd.	55	56
Marathon T. & R. com	3	4
Miller Rubber com	..	62
do 8 pct. pfd.	58	65
Mohawk Rubber	..	110
Portage Rubber com	..	10
do 7 pct. pfd.	..	25
Republic Rubber com	¼	½
do 7 pct. pfd.	7	9
do 8 pct. pfd.	4	6
Rubber Products	..	50
Star Rubber com	..	100
do 8 pct. pfd.	..	100
Swinehart T. & R. com	..	40
do 7 pct. pfd.	..	70
Phoenix Rub. com	..	18
do pfd.	..	90
Standard Tire com	..	100
do pfd.	..	90

New York Stock Prices

Following are the New York Stock Exchange quotations on the various rubber stocks listed for June 6:

	Bid	Asked
Ajax Rubber Co	27⅝	28
Fisk Rubber Co.	13	13¼
B. F. Goodrich Co.	34¾	35
do pfd.	77⅞	78
Kelly-Springfield Co.	35	36
do 8 per cent pfd	70	73
Keystone Tire Co.	12¼	12⅝
Lee Rubber & Tire	26¾	27
U. S. Rubber Co.	61¼	61½
do 1st pfd	98	100

American Rubber Patents

ISSUED MAY 10, 1921

1,377,170—To William F. Aichele, Good Ground,, N. Y. Emergency tire.

1,377,214—To Thomas Midgley, Hampden, Mass., assignor to Fisk Rubber Co., Chicopee Falls, Mass. Steam connection for hollow cores.

1,377,220—To Alfred L. Nye, Gibson, N. Mexico. Continuous pressure gage.

1,377,321—To Henry E. Denison, Waterville, Me. Detachable tread for traction wheels.

1,377,375—To John Velcio, Youngstown, Ohio, assignor of one-third to Charles A. Harpman, Youngstown, Ohio. Combination pneumatic casing.

1,377,627—To Clarence S. Preston, San Diego, Ca. Vehicle—Tire.

1,377,642—To Alexander Twarogowski and Stanislau Klosinski, Detroit, Mich. Rotary heel.

1,377,729—To William F. Ray, Chicago, Ill. Process of applying lubricant to tire casings.

1,377,782—To Teiji Mori, New York, N. Y. Tire.

1,377,903—To Raymond A. Manny and Joseph A. Rielly, Brooklyn, N. Y. Garter.